



THE REPUBLIC OF UGANDA

PREVENTION AND CONTROL OF CHOLERA

Operational Guidelines for the National and District Health Workers & Planners



Control of Diarrhoeal Diseases (CDD) Section
COMMUNITY HEALTH DEPARTMENT,
Ministry of Health



World Health
Organization



for every child

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CHOLERA



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LIST OF ACRONYMS AND ABBREVIATIONS

ACHS	Assistant Commissioner Health Services
AWD	Acute Watery Diarrhoea
CBOs	Community Based Organisations
CDD	Control of Diarrhoeal Diseases
CHEWS	Community Health Extension Workers
CH	Community Health
CHS	Commissioner Health Services
CFR	Case Fatality Rate
CH	Community Health
CHEWs	Community Health Extension Workers
CHS	Commissioner Health Services
CTC	Cholera Treatment Centre
CLTS	Community-Led Total Sanitation
CTU	Cholera Treatment Unit
DHIS-2	District Health Information System -2
DHT	District Health Team
DRRT	District Rapid Response Team
EHO	Environmental Health Officer
EOC	Emergency Operation Centre
ESD	Epidemiology and Surveillance Division
DPD	Diethyl Phenylenediamine
HMIS	Health Management Information System
HP&E	Health Promotion and Education
HSSP-II	Health Sector Strategic Plan-II
JMS	Joint Medical Stores
IDPs	Internally Displaced Persons
IEC	Information, Education and Communication

IV	Intravenous
JMS	Joint Medical Stores
LC	Local Council
MoH	Ministry of Health
MOES	Ministry of Education and Sports
MSF	Médecins Sans Frontières
MWE	Ministry of Water and Environment
NMS	National Medical Stores
NO	Nursing Officer
NRRT	National Rapid Response Team
NGOs	Non Governmental Organisations
NDP	National Development Plan
NICCP17-22	National Integrated Comprehensive Cholera Prevention and Control Plan for Fiscal Years 2017/22
ODF	Open Defecation Free
OPM	Office of the Prime Minister
ORS	Oral Rehydration Salt
ORT	Oral Rehydration Therapy
OCV	Oral Cholera Vaccine
RDT(s)	Rapid Diagnostic Test(s)
RRH	Regional Referral Hospital
SDS	Senior Dental Surgeon
SMO	Senior Medical Officer
SPH	Senior Health Planner
UNICEF	United Nations International Children Education Fund
URC	Uganda Red Cross
UNHLS	Uganda National Health Laboratory Services
USD	United States Dollar
VPH	Veterinary Public Health
WASH	Water Sanitation and Hygiene
WHO	World Health Organization

FOREWORD

Cholera is a public health threat leading to preventable morbidity and mortality. Cholera prevention and control is a multi-sectoral responsibility that requires many sectors/ministries namely: Water and Environment; Local Government; Gender; Education and Sports; Private sector and other government institutions.

The Ministry of Health is responsible for coordination of prevention, preparedness and response to cholera outbreaks or epidemics. For the past 20 years, implementation of the Water, Sanitation and Hygiene (WASH) strategy, in combination with on-going interventions from other sectors has significantly reduced cholera occurrence in Uganda.

The pillars of cholera prevention and control are WASH promotion, surveillance and case management. Oral Cholera Vaccine (OCV) has been introduced as a complementary intervention to prevent and control cholera specifically in “Cholera hotspots”.

It is further hoped that these guidelines will help in consolidating the achievements through promotion of WASH, early detection, reporting and treatment of Cholera in an integrated approach.

I urge all actors and stakeholders in cholera prevention to ensure the implementation of Kampala Declaration on Sanitation (1997) which emphasizes exemplary leadership and WASH promotion.

Lastly, I thank all individuals, organizations and development partners who have generously contributed towards the development and printing of these guidelines.



Prof. Anthony K. Mbonye

Ag. Director General Health Services, Ministry of Health

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PREFACE

Cholera and other diarrheal diseases remain major causes of morbidity and mortality in developing countries and Uganda in particular. Cholera outbreak leads to loss of lives and economic loss to the Country. Each outbreak costs the Country over USD 4,300,000 to control in addition to travel and trade restrictions.

From the year 2011 to 2015, Uganda registered 9,954 cholera cases affecting 18 districts of Kasese, Rukungiri, Bulisa, Nebbi, Mbale, Hoima, Arua, Zombo, Bududa, Butaleja, Sironko, Manafwa, Ntoroko, Busia, Namayingo, Moyo, Bulambuli and Kapchorwa; majority of which were border districts. The highest number of cases was recorded during the 2012 outbreak accounting for 6,226 cases with 135 deaths. This outbreak was attributed to El Nino phenomena.

While in the year 1997/98 alone, over 50,000 cholera cases with 2,000 deaths were reported. This is clear demonstration that the overall cholera preparedness, prevention and control in the Country has greatly improved.

However the available evidence shows that some communities are at great risk of cholera. These communities include fishing communities, peri-urban slum dwellers, border communities, migratory farm workers, landslide and flood victims, refugees, prisoners and the mentally ill. In order to prevent and eliminate cholera, Uganda is targeting the above vulnerable communities.

Ministry of Health has therefore revised the guidelines to consolidate and harness the new approaches which have come on board. These new approaches include use of selective chemotherapy, Rapid Diagnostic Tests (RDTs), Zinc for treatment of cholera in children and complementary use of OCV.

Overall Goal

The overall goal of these guidelines is to contribute to the reduction of morbidity and mortality due to cholera and other diarrhoeal diseases which is in line with Health Sector development Plan goal (HSDP 2015/16-2019/2020);

“To accelerate movement towards Universal Health Coverage with essential health and related services needed for promotion of a healthy and productive life”

The specific objectives are:

- 1) To prevent new cases of cholera through promotion of intensive public health education, sanitation, hygiene, food safety and ensuring safe water complemented by Oral Cholera Vaccination (OCV) for vulnerable groups.
- 2) To reduce deaths from cholera through early detection, reporting, case management and increased access to healthcare.

Strategies for Cholera Prevention and Control

To effectively prevent and control cholera outbreaks, several actors for example environmental, health, social, water, sanitation and communication experts together with leaders at all levels are needed to play complementary roles and responsibilities.

Cross-border collaborations, communication and coordination before, during and after the outbreaks is very important.

These guidelines offer a framework for the development of a comprehensive multi-sectoral preventive and response strategy for prevention and control of cholera in Uganda

Critical Elements in Cholera Interventions

Critical elements in cholera control are Prevention, Preparedness, Response and an efficient surveillance system. These elements are implemented in an integrated manner

1. Prevention

Improve access to safe water; promote sanitation and hygiene and health education on food safety.

2. Preparedness

Train health personnel in detection, identifying, reporting and treating cases; Preparation of district and national plans of action during and after the outbreak. Pre-position medical supplies at health facility, district and national levels. Pre-position water treatment supplies including chlorine tablets at all levels.

3. Response

Detect, confirm, report and manage cases in order to prevent spread, morbidity and mortality of cholera.

4. Effective Surveillance

Routinely collect, analyse and interpret data at the facility, district and national levels for early detection of an outbreak.

During an outbreak, conduct the following;

- ▣ Carry out active case search for timely treatment
- ▣ Identify and list contacts for selective chemoprophylaxis.

5. Intended users of the guidelines:

- ▣ District Health Officers and District Health Teams
- ▣ Health Sub-district In-charges and their teams
- ▣ District Sector Heads
- ▣ Heads of Hospitals and Health Facilities
- ▣ Technical Staff of Ministry of Health
- ▣ Planners and Accounting Officers at National Level, Districts and Urban Authorities
- ▣ Heads of Institutions e.g. Prisons, Schools, Army, Police, IDPs, Refugees etc
- ▣ Consultants and Researchers.

When can the Guidelines be used?

These guidelines can be used before, during and at the end of the outbreak. If there is an outbreak, use it to assess whether any of the aspects of cholera prevention and control have been overlooked.

Structure of the Document

These guidelines are structured into chapters and sections. The first chapter contains general information on cholera while the remaining chapters provide the required technical information for effective cholera prevention, preparedness and control. The technical sections each consist of the following format;

- **Keywords**
- **Useful information for Cholera Prevention, preparedness and Control**
- **Priorities during interventions**
- **Assessment of the Response outbreak.**

CHAPTER 1

General Information on Cholera

Figure 1: Critical elements of cholera outbreak control



General Information on Cholera

Cholera is preventable and treatable acute diarrhoeal disease caused by infection of the intestine with the bacterium *Vibrio cholerae*, either serogroup O1 or O139. Cholera is usually transmitted through consumption of water or food contaminated by faeces bearing the cholera organism.

Cholera remains a major public health threat in communities with inadequate sanitation and safe water. Both children and adults can be infected. About 20% of those who are infected develop acute, watery diarrhoea and 10-20% of these individuals develop severe watery diarrhoea. The incubation period is very short (2 hours to 5 days) and thus the number of cases can rise extremely quickly.

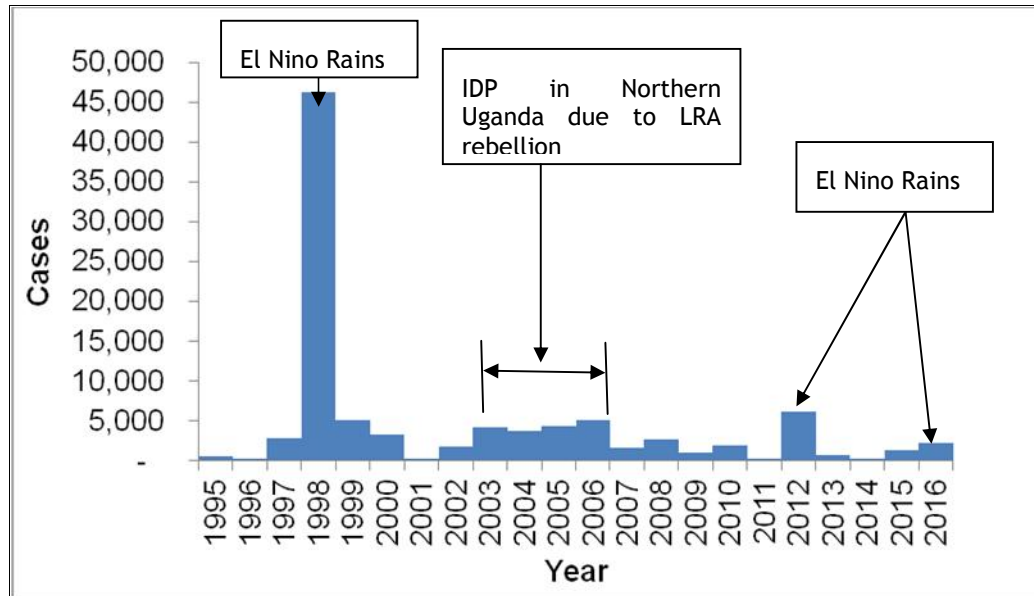
If these patients are not promptly and adequately treated, the loss of such large amounts of fluid and salts can lead to severe dehydration and death within hours. The case-fatality rate (CFR) in untreated cases may reach 30-50%. The mainstay of cholera treatment is rehydration and appropriate antibiotics which can lower CFR to below 1%.

In the recent five years, the most severe cholera outbreak in the year 2012 during which 11 out of the then 112 districts were affected. This outbreak resulted in 6,226 cholera cases and 135 deaths.

Cholera outbreaks are common following heavy rains which result in flooding and disrupt sanitation facilities consequently increasing the risk of water contamination.

The trend of cholera outbreak in Uganda since 1995 -2016 and the effect of *El Nino* is shown in graph below:

Figure 2: Cholera Trends in Uganda from 1995-2016



Outbreaks can occur sporadically in any part of the country where water supply, sanitation, food safety, and hygiene are inadequate. The greatest risk occurs in fishing communities, over-populated communities, peri-urban slum dwellers, IDPs and refugee camp settings characterized by poor sanitation, unsafe drinking-water, and increased person-to-person transmission.

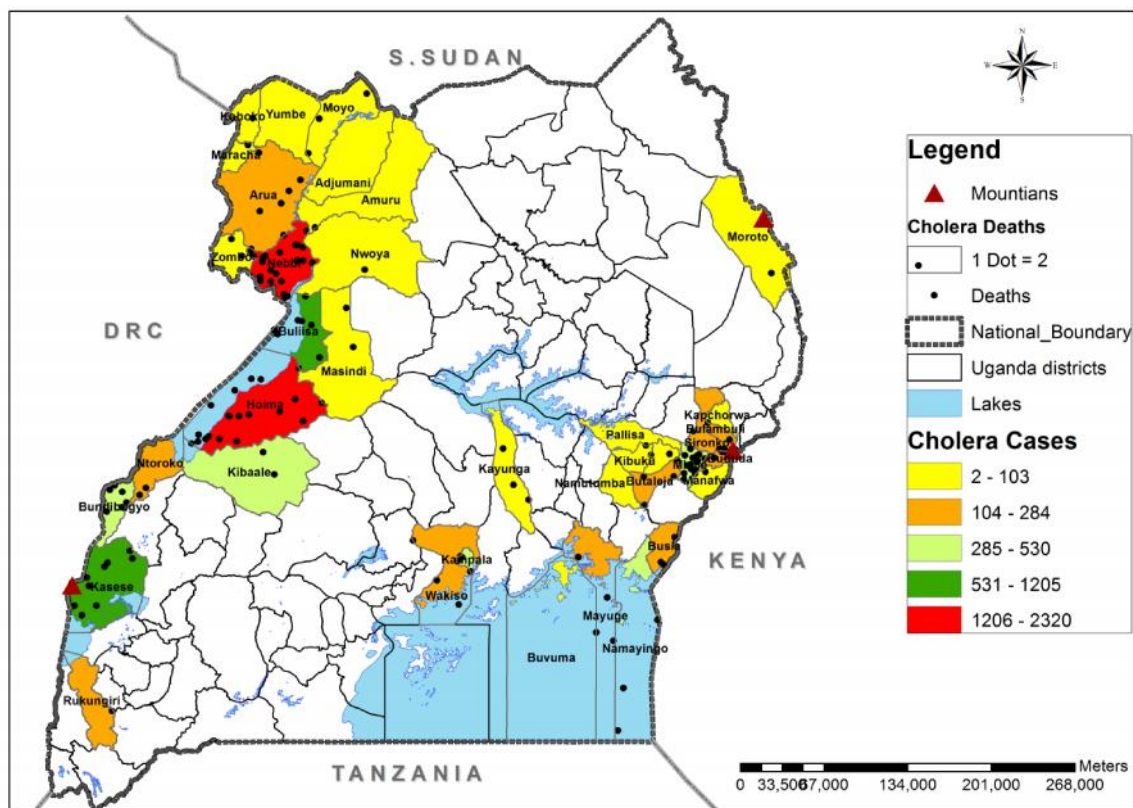
Cross boarder movement especially along Sudan, Kenya and Democratic Republic of Congo is a major contributing factor for infection spread. Thus, the districts along those borders are increasingly reporting more cholera cases.

Cholera can be an acute public health problem with the potential to cause many deaths, to spread quickly and

eventually nationally or even internationally, and to seriously affect travel and trade a well coordinated, timely, and effective response to outbreaks is paramount. An update comprehensive cholera preparedness plan and its implementation is the best preparation to prevent cholera outbreaks in high risk districts.

The areas in the country where cholera is often reported are shown on the map below:

Figure 3: A map of Uganda showing the districts that reported cholera cases between 2011-2016.



Source: (MOH 2011-2016, HMIS/DHIS 2)

1.0 New Approaches to Cholera Prevention and Control

1.1 Rapid Diagnostic Test (RDT)

Use of Cholera RDT is now recommended for rapid detection of cholera cases so as to quickly make a decision to manage the patients more closely if the Cholera RDT tests positive. A delay in decision making by the clinical team may lead to fatal outcome and spread of infection to other community members.

1.2 Selective Chemoprophylaxis

Administration of recommended antibiotics to immediate contacts of cholera patients has been shown to be effective in preventing the spread of infection to other members of the community.

Mass chemoprophylaxis of community members should be avoided as it is not effective and may worsen the situation through false confidence and result in antimicrobial resistance due to unauthorized use.

1.3 Oral Cholera Vaccines

The pillars of cholera control are mainly WASH. Complementary use of oral cholera vaccine is recommended in prevention of cholera outbreaks in vulnerable populations.

CHAPTER 2

Surveillance and Outbreak Detection

Risk factor identification



Picture 1: Rapid response team: A team of four officers conducting inspection of water point and collection of water sample for microbiological analysis

Surveillance and Outbreak Detection

KEY WORDS

Surveillance, Early Detection, Rapid Verification, Outbreak Investigation

USEFUL INFORMATION FOR CHOLERA PREVENTION, PREPAREDNESS AND CONTROL

Preventing and control of cholera relies on effective surveillance systems. Surveillance is the ongoing systematic collection, analysis, interpretation and timely dissemination of health data for informed decision making and action

Strengthening cholera surveillance expedites the detection of the index case and initiation of the outbreak control measures through an integrated approach. Surveillance should starts with early detection and rapid verification to guide response.

PRIORITIES DURING INTERVENTIONS

2.0 Cholera surveillance objectives are:

- To detect and respond promptly to suspected cases of cholera
- To collect, transport stool specimens for laboratory confirmation of an outbreak
- Conduct immediate case-based reporting of cases and deaths when an outbreak is suspected.

2.1 Cholera surveillance before an outbreak

In areas where a cholera outbreak is not yet declared, passive surveillance is done. Districts should develop and implement cholera preparedness and response plans before any outbreak. The plans should be comprehensive, involving both prevention and response activities.

Training of health workers on cholera management is important for proper detection and reporting of suspected cholera cases.

2.2 How to detect a cholera outbreak

Information about a possible cholera outbreak can be obtained by any of the following ways;

- Clinical suspicion by the health workers at the health facilities
- Rumours from the community including Village Health Team members (VHT) or CHEWs, local authorities and religious leaders
- Reports from health facilities, private clinics, drug shops, traditional healers

- Media reports of clustered diarrhea related illness or deaths
- Information from a hot line or the District health information System Version 2 (DHIS-2) alert system.

Regardless of how information of a suspected cholera outbreak is obtained, it is important to quickly verify and confirm the outbreak.

2.3 Rapid Verification and Investigation

When a cholera outbreak is suspected, the District Health Officer (DHO) must be notified immediately. In turn, the DHO should also notify Ministry of Health within 24 hours.

A multidisciplinary District Rapid Response Team (DRRT) should be sent within 24 hours to the affected area in order to confirm the outbreak and take the first measures to control further spread of the disease.

The District Rapid Response Team should consist of:

- A clinician (medical doctor, clinical officer or nurse) who will verify patients' clinical symptoms and train health care workers in case management
- Laboratory staff who will take stool samples (and environmental samples) for laboratory confirmation of cholera and train health care workers in correct sample collection procedures
- Health inspector who will promote WASH and investigate the possible sources of contamination
- Health Educator who will disseminate key cholera preventive messages and assess how the community reacts to cholera

Where it is not possible to get all the specialties a small team should adopt a comprehensive approach to address all aspects

of the investigation. This team should work with local authorities and health facility staff to identify which control interventions to implement.

2.4 Investigation of the Outbreak

While in the field, DRRT members should collect information related to establishing the source of infection and risk/exposure factors. The teams should use standard case definitions below to identify and classify cases.

2.4.1 Case definitions

- **Community case definition:** Any person with lots of watery diarrhea in an area where an outbreak has been declared

2.4.2 Suspected case:

- In a patient age 5 years or more, presenting with dehydration or a death from acute watery diarrhea
- In an area with cholera epidemic, any person age 2 years or more with acute watery diarrhea.

2.4.3 Confirmed cholera case

A suspected case in which *Vibrio cholerae* serogroup O1 or O139 has been isolated in the stool.

Once the cholera outbreak has been confirmed, the mode of transmission (water or food) must be established to institute appropriate control measures

2.5 Epidemiological Description and Mapping of Cases

At the health facility, the health workers should assess every case and fill in a cholera case investigation form ([Annex 1:](#)). This information helps to identify the most affected population, infection source and potential route of transmission.

In addition, to filling a case investigation form the health workers should compile a line list of cholera cases which is a page of a cholera register ([Annex 2:](#)) which updated and submitted daily to the district.

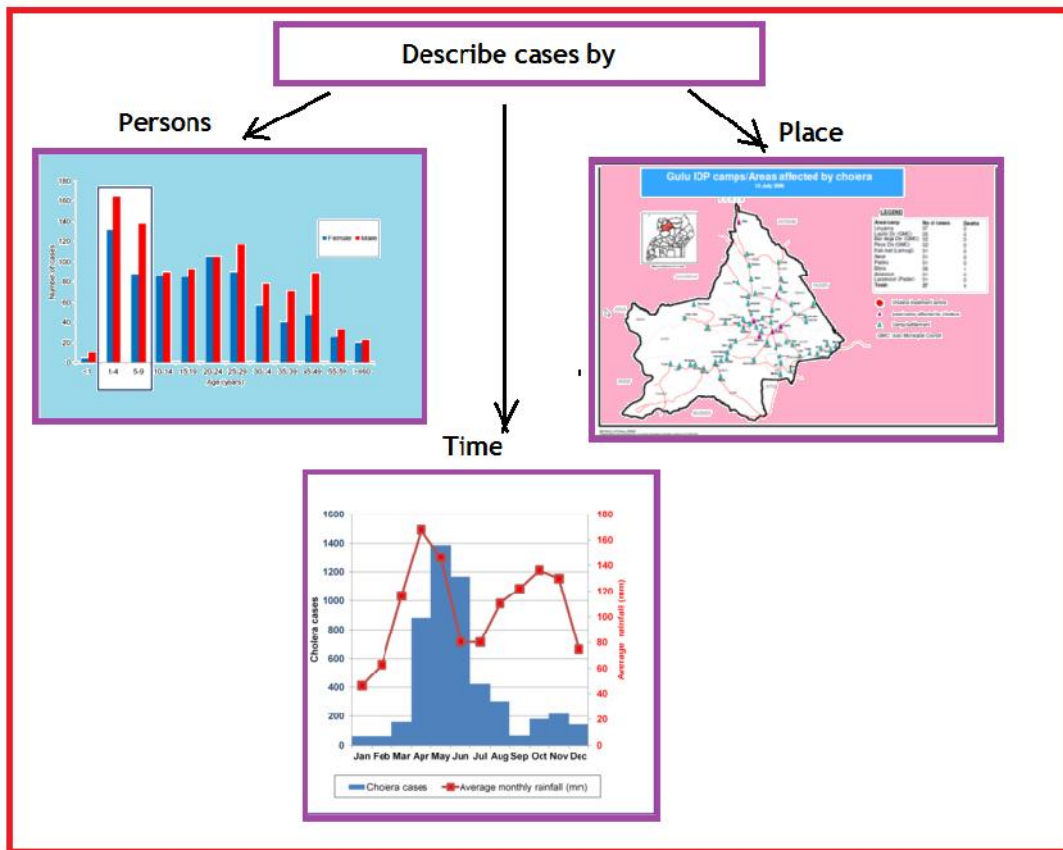
2.5.1 Analyze and Interpret Data

The surveillance team supported by the district biostatistician or HMIS focal person should analyze and interpret cholera data regularly to guide response and control interventions. Report case-based information immediately and summarize information monthly for routine surveillance.

Assess risk factors to improve control of sporadic cases and outbreaks by performing the following analysis:

- **Time:** Plot daily / weekly cases and deaths and construct an epidemic curve during outbreaks
- **Place:** Plot the geographical location of the households with cholera cases to generate a sketch map. The map should important landmarks e.g. rivers, water sources, health factories etc.
- **Person:** Count daily / weekly total cases and deaths for sporadic cases and during outbreaks. Analyze distribution of cases by age, sex and according to sources of drinking water.

Figure 4: Summary of the epidemiological analysis to be performed



2.6 Surveillance Thresholds

2.6.1 Alert threshold

An alert threshold for cholera is one suspected case. The following should be done immediately:

- Report to high level
- Manage and treat the case according to these guidelines
- Promote infection control at all levels
- Conduct case-based investigation to identify similar cases
- Obtain stool specimen from suspected cases before antibiotic treatment is started. See laboratory guidelines

for information on how to collect, store and transport the specimens in chapter 3.

2.6.2 Epidemic threshold

A cholera epidemic/outbreak is declared when there is one laboratory confirmed case.

If a suspected case is confirmed establish Cholera Treatment Centre (CTC) in locality where cases occur and activate the district cholera task force to coordinate preventive and control interventions.

The district cholera task force should coordinate with the national level and other stakeholders.

2.7 Active Cholera Case Surveillance

2.7.1 Community participation

- Engage the community members, leaders and VHTs/CHEWs to identify and refer suspected cholera cases promptly for confirmation and care.
- Disseminated widely community case definitions to promote case detection.
- Health workers should investigate any suspected cholera community death before being including them on the line list.

2.7.2 Contact tracing

The aim of contact tracing is to identify and follow up people who interacted closely with cholera cases within seven days of exposure or visited / stayed in the household of cholera cases.

Contact tracing involves listing persons followed by physically visiting them to carry out the following;

- Identify any case for referral to the health facility and treat mild cases at home
- Give selective chemoprophylaxis to the contacts who have not yet developed signs and symptoms
- Promote household treatment of drinking water with chlorine (Tablets or **dispensers** at water points) or by boiling
- Evaluate and promote WASH
- Promote food safety
- Health education on prevention and control of cholera
- Document status of each exposed person, contact list template: ([Annex 3](#):)

Note: Contact tracing is conducted by health workers and CHEWs/VHTs.

2.7.3 Situational reports (Strep)

- All districts with confirmed cholera outbreaks should submit daily situational reports to MOH. This report gives the daily number of new cases, deaths, cumulative and summarizes the interventions being conducted.
- Situational report should be submitted to Epidemiological Surveillance Unit (ESD), Control of Diarrheal diseases Section (CDD) and Emergency Operational Centre (EOC)
- The district template for a situational report ([Annex 4](#)).

ASSESSMENT OF THE OUTBREAK DETECTION

1. How were the first cases notified to health authorities (surveillance system, media release, radio announcements, informal sources, others)?
2. At the beginning, what alerted people to the possibility of an outbreak:
 - ▣ A sudden occurrence of the disease?
 - ▣ A sudden increase in the number of cases?
 - ▣ An abnormal number of deaths?
3. On what basis was it decided that this was an outbreak:
 - ▣ A single case or a cluster of cases?
 - ▣ Case incidence greater than expected (compared with the same period of time in previous years)?
4. How long did the information take to reach decision-making level from the area where the outbreak occurred? (It should not be more than one week.)
5. Did the district compile and submit the daily situational report?
6. What were the first actions taken at the health facility or district level:
 - ▣ Telephone call to the affected areas to verify rumours?
 - ▣ Dispatch of a rapid-response team?
 - ▣ Other measures taken?

CHAPTER 3

Confirmation of cholera outbreak

Transportation of cholera sample to laboratory



Picture 2: Transport media, Cary Blair is the recommended transport media

Laboratory Confirmation

KEYWORDS

Culture, Serotype, Microbial Sensitivity pattern, Rapid Diagnostic Test

USEFUL INFORMATION FOR PREVENTION, PREPAREDNESS AND CONTROL

Laboratory confirmation of *Vibrio cholerae* is by **culture method** which allow isolation of the *Vibrio cholerae* organism from stool sample and determination of serotype and genotype to confirm the outbreak.

This method also gives microbial antibiotic sensitivity which is important in guiding antibiotic use.

Rapid Diagnostic Test (RDT) is the initial recommended test for detection of *Vibrio cholerae*, before culture method.

The advanced distribution of sample collection materials, Cholera RDTs, transport media and rectal swabs in areas that are prone cholera outbreaks is paramount.

Laboratory confirmation by isolation of vibrio cholerae from stool of the cases is essential to ascertain that this is a cholera outbreak or not.

The end of a cholera outbreak is declared after 14 days past the last positive stool sample.

PRIORITIES DURING INTERVENTIONS

3.0 Laboratory Functions in Cholera Outbreak Investigations

- Preparation and preposition of transport media and other supplies before and during the outbreak
- Specimen collection
- Completing standard laboratory investigation form ([Annex 5:](#))
- Shipment of specimens to relevant laboratories
- Specimen screening using RDTs and other preliminary tests.
- Culture and drug sensitivity
- Communication of results to clinicians

3.1 Type of laboratory sample

There are two major types of samples collected during cholera outbreak investigation.

3.1.1 Clinical samples

These are samples collected from cholera patients and suspects

- Watery Stools from patients
- Rectal swabs from very ill patients / children / community deaths.

Note: Stool specimens must be taken from all cases that meet the suspect case definition

3.1.2 Environmental samples

These are samples collected to assess for possible sources of infection from the environment.

- Water

■ Food

3.2 Procedure for Clinical Sample Collection

3.2.1 Fresh stool samples

Collecting fresh stool is very important

1. Directly collect the watery stool into clean sterile dry stool container.
2. Then inoculate in 1% Alkaline Peptone Water (APW); incubate for 6 hours; transport at room temperature to the testing laboratory.
3. In the absence of APW, place stool in sterile plastic bag with absorbent materials
4. Label the samples with patient name or number, date and time of collection.
5. Transport within two hours to the testing laboratory or put under cold chain if delays are expected.

3.2.2 Rectal swabs

Rectal swabs should be collected on all suspected cholera patients where fresh stool is not possible. All suspected cholera deaths should have rectal swab taken for cholera confirmation.

1. Moisten a sterile swab in physiological saline
2. Insert the swab 2-3 cm through the rectal sphincter and rotate once.
3. Withdraw the swab and examine to make sure it carries visible fecal material.
4. Immediately insert the swab into Cary-Blair transport media, pushing it right to the bottom of the tube.
5. Break off and discard the top of the swab stick touching the fingers.

6. Label the container with patient name, collection date and time.
7. Dispatch the sample to the laboratory within 7 days if in transport media or immediately if the testing laboratory is close by.

Note:

1. Specimens should be collected **before** administration of antibiotics.
2. All samples must be accompanied with a fully completed standard laboratory investigation form and RDT results

3.2.3 Viability of transport media

- Cary-Blair transport medium or Alkaline Peptone Water (APW) allows better conservation of samples. It is not necessary to refrigerate the sample
- Tubes of Carry-Blair transport medium can be stored at ambient temperature for 1-2 years; the medium can be used as long as it does not appear dried out, contaminated, or discoloured.

3.3 Referral and transportation of Samples using the hub system

Ensure the following are observed:

- All cholera samples should be packaged using a triple packaging system and transported to reference laboratories using the existing operational national specimen referral and transport network system

- Notify the reference laboratory in advance (Regional Laboratory, UNHLS disease surveillance and outbreak investigation)
- laboratory Case Investigation Form (CIF) is properly filled
- Proper ADDRESS “To and From” on the outer box is clearly written.
- Submit the sample to the nearest Regional Referral Hospital laboratory with capacity to perform culture and sensitivity or directly to the Uganda National Health Laboratory Services (UNHLS) formerly CPHL, located on Plot No: 106 1062 Butabika Luzira Road, opposite Butabika National Referral Hospital.

Notify UNHLS on: 0800221100 - toll free (or Tel +256-414230265) or PHEOC on 0800203033 -toll free

E-mail: unhlsmicrobiologylab@gmail.com.

3.4 Factors that may affect quality of laboratory test.

- Improper stool sample collection procedure such as sample collected from cholera bed, floor, bucket, etc
- Sample swab inserted in dried out transport media
- Interfering materials, JIK, acidic environment
- Patient already on antibiotics
- Availability, selection and use of transport media
- Time delays in sample submission
- Lack of trained staff in sample collection and handling media preparation
- Leaking stool samples. It is important to tighten the cap completely before shipping stool samples
- Specimens submitted in fixative or other additives

3.5 Collection and Storage of Cholera Isolates

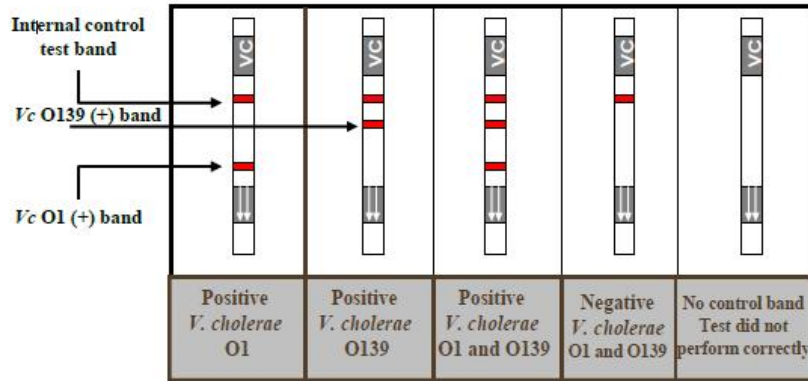
All cholera culture isolates from RRH/ or any other facility with capacity for culture and sensitivity should be sent to UNHLS bacteriology reference laboratory for confirmation and quality control, phenotyping, genotyping, bio-banking, bio-safety and bio-security management.

3.6 Testing For Vibrio Cholerae with RDTs

To test for cholera using RDTs follow the steps below:

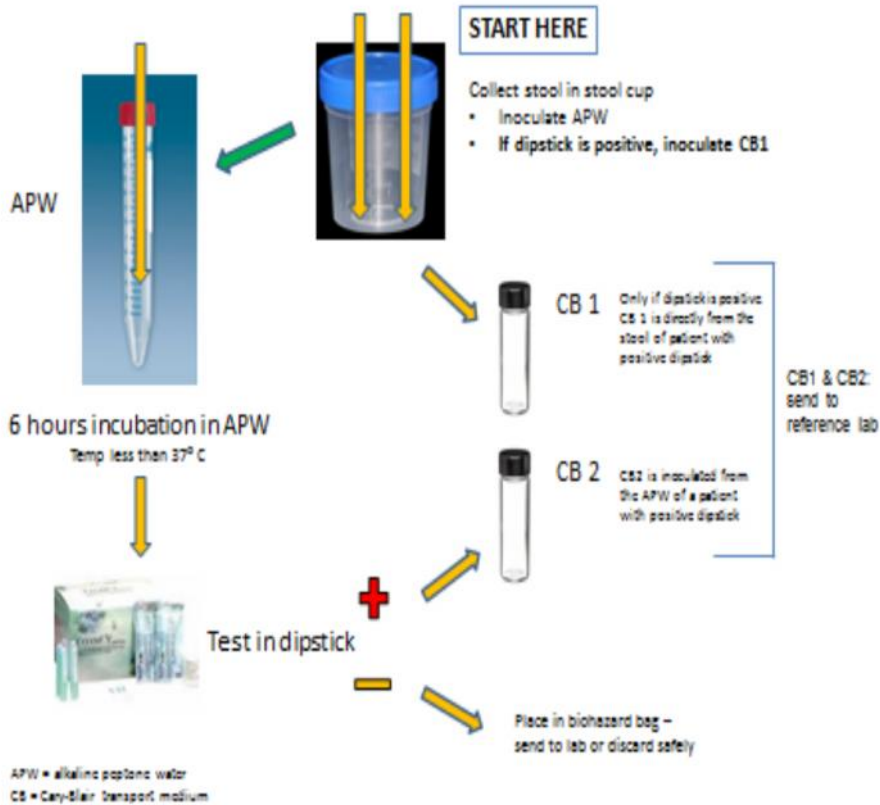
1. Incubate fresh stool sample (2 drops) or rectal swab in 1% APW for 6 hours.
2. Suck 4 drops of APW into a test-tube and keep the test-tube in vertical position.
3. Read the manufactures instruction on the RDT test strips.
4. Insert one RDT test strip into a test-tube with 1% Alkaline Peptone Water (APW) in vertical position.
5. Read the after 10-15 minutes but not beyond 15 minutes.
6. Interpret the test result as negative, positive for O1, positive for O1 and O139, positive for O139 or invalid as indicated in the Figure 4.

Figure 5: Interpretation of RDT test



3.6.1 Summary of testing with RDTs

Figure 6: Cholera RDT testing procedure for stool swabs

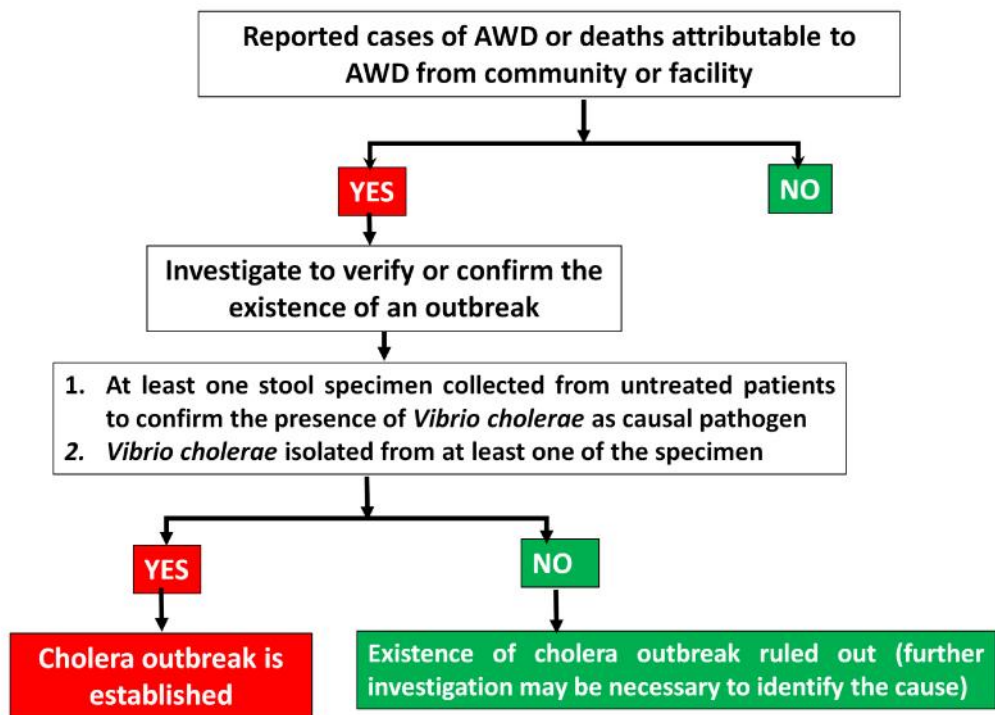


3.7 Laboratory confirmation by culture method

This is the standard method and is the basis for cholera outbreak declaration.

- Stool samples are collected from **10-20** Acute Water Diarrheal (AWD) patients according to laboratory guidelines and using Cary Blair transport media.
- *Vibrio cholerae* isolation is done by standard laboratory method for *vibrio cholerae*.
- Isolation of *vibrio cholerae* O1 or O139 from one sample is a confirmation of a cholera outbreak.
- Laboratory confirmation of the first **10-20 cases** is essential to ascertain that this is a cholera outbreak.
- After confirmation few stool samples should be taken randomly during the outbreak for monitoring antimicrobial sensitivity pattern of the pathogens.
- The chart below is a summary of the steps in laboratory confirmation of *vibrio cholerae*.
- Usually, the culture result is received within 24-48 hours of incubation.

Figure 7: Steps in laboratory confirmation of cholera outbreak



ASSESSMENT OF THE OUTBREAK RESPONSE

- 1) How was the diagnosis confirmed:
 - Through RDTs or culture?
 - Clinical case definition?
- 2) How the samples packaged, stored and transported?
- 3) In the case of laboratory confirmation, were the collection and the transportation of samples adequate?
- 4) Did the laboratory use enrichment techniques for the culture of *Vibrio cholerae*?
- 5) How long did the laboratory take to provide confirmation?
How many samples were taken?
- 6) What proportion of samples was positive?
- 7) How were the results communicated?
- 8) What was the turnaround time (from collection of samples to receipt of results)?

CHAPTER 4

Coordination of Outbreak Response

District cholera task force



Picture 3: Budaka district, cholera task force meeting with partners such as Uganda Red Cross

Coordination of Outbreak Response

KEYWORDS

Coordination, Cholera Task Force, Coordination Levels

USEFUL INFORMATION FOR PREVENTION, PREPAREDNESS AND CONTROL

There are two main levels of cholera epidemic response in Uganda National and District level.

A Cholera Task Force or Committee should be in place at National and in the districts with cholera outbreaks. The Task Force oversees all activities during a cholera outbreak response. The committee should meet frequently at the beginning of the cholera outbreak to ensure implementation of the priority activities.

Minutes of meetings are an essential element in monitoring of the outbreak response and to ensure that the committee functions correctly. The minutes should be detailed with clear action points for the various actors/ members.

PRIORITIES DURING INTERVENTIONS

4.0 Composition of the National Cholera Task Force

The overall coordination of cholera response in Uganda is vested in the National Cholera Task Force chaired by the Director General Health Services (DGHS) (Ministry of Health). Membership shall include:

- Chairpersons of sub-committees (Case management, Surveillance, Social mobilization, WASH)
- Partners (UN Agencies such as UNICEF and WHO, NGOs, International organizations, Development Partners)
- Civil society organizations
- Other line Ministries especially Office of the Prime Minister, Ministry of Water and Environment, Ministry of Finance and planning economic development and related agencies and departments.

4.1 Composition of the District Cholera Task Force

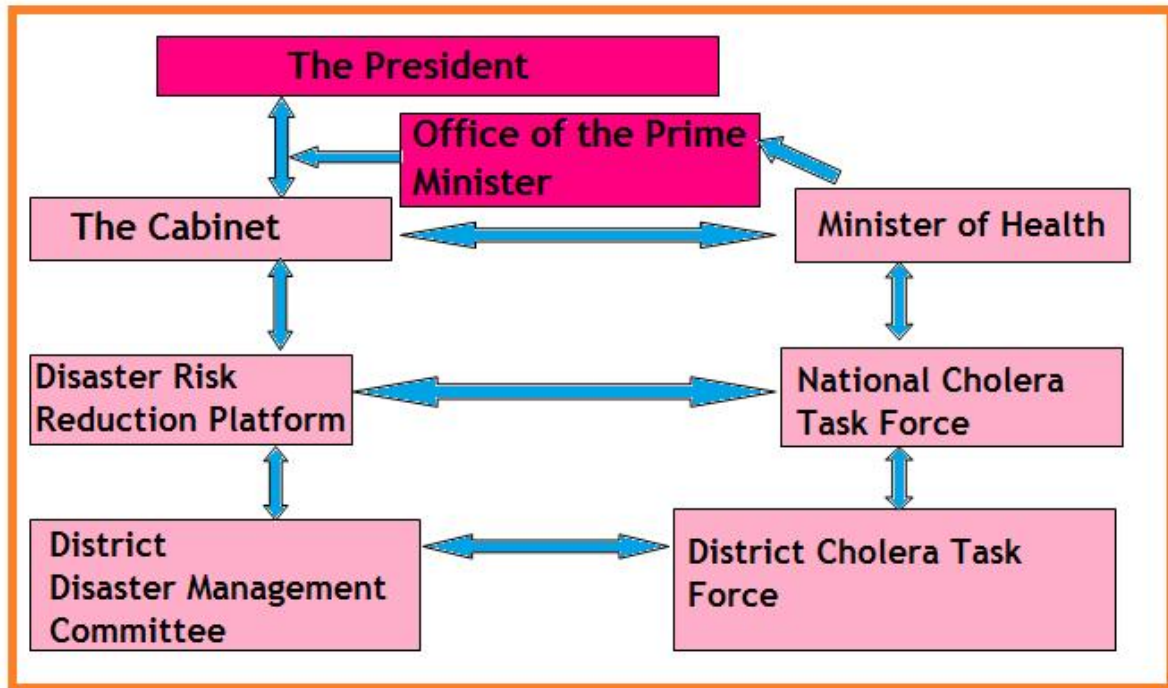
The team members must include the following:

- Resident District Commissioner (Chairperson of the meeting)
- District Chairman (Co-Chairperson of the meetings)
- Chief Administrative Officer (Deputy Chairperson)
- District Health Officer (Secretary)
- Assistant District Health Officer- Environmental health
- Assistant District Health Officer- Maternal and Child health
- Medical superintendent of the nearest hospital
- In charge of health facility with the outbreak
- District health educator

- District Surveillance Focal Person
- District Laboratory Focal Person
- Hospital Director of the Regional Referral Hospital
- Head(s) of Health Sub-District (s)
- Community Development Officer
- District Water Officer
- District Education Officer
- District Engineer
- Mayors and Town Clerks of Municipalities & Town Councils
- Head of Institutions such as Police, Prisons etc
- Religious leaders
- Head(s) of Traditional and Complementary Medicine practitioners
- Partners (CBOs, NGOs, Implementing Partners, UN Agencies)
- Business Community
- Other Support Staff.

4.2 The structure of the emergency preparedness and response coordination in Uganda

Figure 8: Structure of the Emergency Preparedness and response Coordination



4.3 Functions of a Cholera Task Force

This is a multi sectoral Committee which should be present at national, district or any other level. This committee has the following functions:

- Ensure implementation of measures that prevent and control cholera outbreaks
 - To prepare and ensure implementation of cholera preparedness and response plans
 - To mobilize resources
1. Determine priorities for intervention. A check list of priority interventions ([Annex 6](#))

- To identify and make contact with local and international partners and civil society involved in cholera response
- To hold regular coordination meetings with stake holders and partners
- To ensure availability of cholera outbreak needs (human resources, logistics, financial and security)
- To promote adherence to standards and best practices
- Organize treatment structures, protocols and supplies
- Set up a platform for sharing cholera outbreak information with the public
- Set up a supervision, monitoring and evaluation system for the cholera preparedness and response
- Notify the outbreak to Director General Health Services - Ministry of Health for declaration.
- To declare end of an outbreak and close the treatment centers in consultation with the Ministry of Health

4.4 Multi-Sectoral Approach and Cross-border Coordination

- Cholera prevention and control is a responsibility of all sectors. Each sector has to role play depending on the cause of the outbreak.
- The Ministries of Water and Environment; Local Government; Education and Sports; Office of the Prime Minister; Finance, Planning and Economic Development; Works etc should participate very actively.
- The issue of cross-border cholera outbreaks is a big challenge in the control. Interventions should involve corroboration of the two affected countries/border Districts. The affected border districts need to be in touch with neighbouring districts through regular cross-border meetings.

4.5 District Level Coordination - District cholera Task Force

- All districts with cholera outbreaks must have a District Cholera Task Force or Committee that is responsible for the overall coordination of the cholera outbreak response.
- The task force should have sub-committees focusing on priority interventions. The common sub-committees and their heads are in [Annex 16](#).
- The district cholera task force should link with the National Task Force during the entire period of the outbreak response.
- Cholera outbreak report generated by the district team should be addressed to the Director General of Health services (DGHS) with copies Control of Diarrheal Diseases (CDD) Section, Public Health Emergency Operation Centre (EOC) and Epidemiology Surveillance Division (ESD).
- The District committee should develop a cholera response plan and use it for resource mobilization and assessing progress on planned cholera prevention interventions.

4.6 Cholera Preparedness and Response Plan

Upon confirmation of the cholera outbreak, the District Cholera Task Force should develop/update the response plan within a week of confirmation of the outbreak. The 3-6 months plan should have costed activity estimates for priority interventions that include the following:

- WASH: water treatment reagents, inspection of homes, eating places and schools, protection of water sources, promotion of hand washing, enforcement of latrine construction etc.
- Surveillance: follow of cases and reporting, contact tracing for health education and selective chemoprophylaxis
- Case management: essential medical supplies, CTU requirements, transport and ambulance support, Communication requirements, food for the patients etc
- Social mobilization: Health promotion, meetings with local leaders, community members, radio messages etc
- Coordination: support regular coordination meetings, provision for monitoring and supervision of interventions, printing of minutes etc.

4.7 Urban Authorities (Kampala City Authority and Others to be, Municipalities and Town Councils)

The urban authorities should constitute a cholera coordination committee which technically reports to the District Cholera Task Force chaired by the RDC.

4.8 Regional Referral Hospitals (RRH)

Regional referral hospitals are well endowed autonomous unit in the National health system with various resources - human, equipment, laboratory and infrastructure to support the district response teams. The RRH should be contacted in the earliest possible time to participate in the district cholera outbreak response.

4.9 Steps in Response to a Cholera Outbreak

When the first report of a confirmed cholera case is received the following activities should be performed (the order may vary according to the situation):

- Convene the cholera coordination committee meetings regularly
- Make an inventory of available essential supplies
- Inform the public, neighbouring districts, and the media
- Conduct training if needed
- Set up temporary treatment centres if needed
- Collect, report, and analyse data on cases, deaths, and control activities; document the epidemic
- Provide feedback and adapt interventions
- Implement measures to control the spread of the disease (disinfection of water sources, food safety measures)
- Conduct health education campaigns
- Ask for additional help if necessary
- Monitor and evaluate control measures
- Document the epidemic

However, even before the outbreak you must have a preparedness and response plan to prevent and control

cholera [Annex 7](#):, shows a checklist of the necessary key actions.

4.10 Supplies Required For Cholera Control

Effective care depends on the availability of supplies and equipment. The supply system must ensure that rehydration fluids, antibiotics, and other supplies are ready when needed.

The system must also be cost effective. Overstocking of supplies should be avoided, and supplies should be purchased at reasonable prices (NMS and JMS). In the midst of epidemics, panic frequently results in unwise purchases, inefficient planning, and blockages in a system that cannot handle the increased demand.

To avoid overstocking or under stocking of supplies and misuse of resources, it is important to estimate the expected number of cholera cases and when they can be expected. The list of supplies needed for treating cases, contacts and setting up emergency treatment facilities is shown in [Annex 8](#).

4.11 Training of Health Workers

The quality of care for the patients with cholera depends on the knowledge, skills and the right attitude of health personnel. The training of a health staff can be achieved in many ways that include:

- Continuous Medical Education (CME) which can be done at the health facility
- Job aids
- Regular supervisory visits that reinforce and upgrade what has been learned

- For clinical tasks, supervised hands-on management of patients (mentorship) is usually considered to be indispensable
- Workshops and clinical courses

Oral Rehydration Therapy (ORT) is a principal medical intervention which requires a special emphasis during the training. The training should put emphasis on the following:

- Case management of cholera and its complications
- Infection control
- Care for the sick (pregnant mothers, diabetics, etc) and the dead
- Environmental health
- Data utilisation for decision making, surveillance and information

In addition to training, it is important to ensure that all health workers have access to Ministry of Health standard treatment guidelines on cholera at all times.

Training of Health workers on a cholera



Figure 9: Bwera Hospital-Kasese district (September 2006): orientation of health workers on standard cholera treatment guidelines. Cholera Case Fatality Rate (CFR) for the district during 2006 was less than 1%.

Documentation of the End of Cholera Outbreak

A summary report on outbreak interventions should be compiled and disseminated after the outbreak to the local stakeholder to provide feedback. This is important for training and planning appropriate future responses. An end of outbreak report format is [Annex 9](#).

- The report should also be sent to MOH
- Evaluation of the response is important so as to ensure better future outbreak management.

ASSESSMENT OF THE OUTBREAK RESPONSE

1. Was there a Cholera Task Force to follow up the outbreak and take decisions? Was this committee multispectral?
3What was the timeliness of reporting to PHEOC/MoH and investigation of the outbreak?
2. What measures were taken to control the outbreak:
 - a. legal decisions (banning of festivals,
 - b. Inspection of food handlers and restaurants, etc.)?
3. Assistance provided to affected areas (supplies, technical and staff support)?
4. Measures in ensuring Community participation and outbreak response?
5. Timely and adequate mobilization of emergency supplies from national or donor sources?
6. How was the response monitored? Follow-up of the outbreak through regular epidemiological reports?
7. Who was the person designated to monitor and document control activities?
8. Was a cholera preparedness and response plan of action available?
9. Was there an easy information flow from the affected areas to the control level and vice versa?
10. What was the case fatality rate (Facility based and community based)
11. What were the challenges experienced in the Control of the cholera epidemic?
12. Which measures will be taken to prevent outbreaks?

CHAPTER 5

Management of Information

Timely and accurate information is important



Picture 4: Palisa district (2008): Hon Minister of Health Dr. Stephen Maling (RIP), Mobilising the community to prevent cholera.

Management of Information

KEYWORDS

Clarifying Rumors - Partnership with Media

USEFUL INFORMATION FOR PREVENTION, PREPAREDNESS AND CONTROL

Before the outbreak, responses should be prepared to the most common questions about cholera outbreak and preventive measures; epidemiological data from previous years should be available.

It is important to ensure an open flow of information from the beginning of the outbreak, to prevent the spread of the misleading rumors.

Local beliefs about the cholera transmission should be explored and any misconception addressed. A close collaboration between the media and health team is necessary throughout an epidemic.

Media information should emphasize how cholera is spread, prevention, recommended treatment, where to go for treatment, handling of the dead and need to report all cases to the health workers.

Frequently asked questions (FAQs) should be prepared to answer the most common questions about the disease and the preventive measures.

PRIORITIES DURING INTERVENTION

5.0 Common Communication Channels

Before, during and after an outbreak the following channels can be used to reach the public;

- Megaphones (local village radios)
- Meetings with health personnel, community and political leaders
- Meeting at functions (burials, ceremonies etc)
- Presentations at the markets, health centres, schools, places of worship i.e. churches, mosque and synagogues.
- Radio
- Television Newspapers
- Posters and fliers
- Reports

5.1 Avoid Rumors

Avoid rumours and panic by maintaining a very open flow of information. Rumours spread easily when information is incomplete or delayed.

5.2 Spokesperson

- When an outbreak starts, designate a single spokesperson who will be the focal point for dealing with the media.
- Plan and conduct regular press releases and conferences
- The DHO is usually the focal person but any other officer with key skills can be delegated this task
- The information to be shared will depend on the communication media (local or national)
- Public health information should include aspects of

both preventive and clinical care.

- The heads of the sectors namely, the Ministers of Health, Director General Health Services, Resident District Commissioner and LC-5 should be guided to participate in passing out information to the public and other leaders.

Using leaders to communicate critical information



Picture 5: Butaleja District 2016, Hon. Minister of Health, Dr. Jane Ruth Aceng (standing) communicating the required cholera preventive and control measures to the local leaders in the district.

ASSESSMENT OF THE OUTBREAK RESPONSE

- 1) Was there a strategy to disseminate accurate information promptly rather than respond to rumors?
- 2) Did the involvement of the media contribute constructively to control of the outbreak?
- 3) Was a spokesperson in the Ministry of Health or district designated?
- 4) Was there a good balance between public and health announcements and news?
- 5) Was there any procedure for assessing the impact and spread of information?

CHAPTER 5

Case Management and Selective Chemoprophylaxis

Quick correction of rehydration using ORS and in some patients intravenous fluids is key in management



Picture 6: Mbale district (2008); Busiu HC-IV CTU, patients improved quickly due to good care.

Case Management and Selective Chemoprophylaxis

KEYWORDS

Assessment of the Patient Rehydration, Treatment, Selective Chemoprophylaxis and Health Education

USEFUL INFORMATION FOR PREVENTION, PREPAREDNESS AND CONTROL

Training of health workers is an essential element for preparedness especially in high-risk areas.

Emergency supply needs should be evaluated in the light of the particular situation. The attack rates below are useful in estimating the new cholera cases during an epidemic.

- In open settings, an attack rate of 0.2% might be used
- In rural communities of 5,000 people or less, the attack rate might reach 2%
- Likely attack rate in IDP or refugee camps, with high-risk populations (because of malnutrition), is 5-8%.

Timely prevention and treatment of dehydration is the basis of good cholera case management.

Selective chemoprophylaxis with recommended antibiotics has a role in limiting transmission of the infection to other community members in the immediate contact with the patient(s).

PRIORITIES DURING INTERVENTION

5a.0 Management of Cholera Patients

The steps in management of a cholera patient are:

- STEP 1: Assess for dehydration
- STEP 2: Rehydrate and monitor frequently
- STEP 3: Maintain hydration: replace ongoing fluid losses until diarrhoea stops
- STEP 4: Give oral antibiotics to all cholera patients
- STEP 5: Give Zinc Tablets To All Under-Five Year Old With Cholera
- Step 6: Feed The Patient
- STEP 7: Health educate and counsel the patients, attendants and the family

5a.1 Assessment and Classification of Patients

Cholera patients can be assessed for dehydration and grouped as in table 1.

Table 1: Assessment and classification of cholera patients for dehydration

Degree of Dehydration	No dehydration	Some Dehydration	Severe dehydration
1. Look at: a. General condition	Well, alert	Restless, Irritable Fluid loss less than 10% of body weight	Lethargic or Unconscious / floppy Fluid loss more than 10% of body weight. Pulse: barely detectable.
b. Eyes	Normal	Sunken	Very sunken and dry
c. Tears	Present	Absent	Absent
d. Mouth and tongue	Moist	Dry	Very dry
e. Thirst	Not thirsty, drinks normally	Thirsty, drinks Eagerly	Drinks poorly or not able to drink
2. Feel	Skin pinch Goes back quickly	Goes back slowly (within 2 seconds) Care must be taken for the elderly persons	Goes back very slowly (more than 2 second) Care must be taken for the elderly persons
3. Decide	No sign of dehydration: Plan A	The patient has two or more signs including at least one bold sign: Plan B	The patient has two or more signs including at least one bold sign: Plan C
4. Treatment	ORS plus health Education, counseling and rehabilitation observe for 4 hours then discharge on ORS, recommended antibiotics and zinc for children under 5 years	Oral rehydration with ORS, recommended antibiotic and zinc for children under 5 years, vigorous monitoring at CTU. Continue feeding	IV therapy plus recommended Antibiotics, and zinc for children under 5 years and ORS as soon as able to drink. Continue feeding

5a.2 Rehydration

- Rehydration with replacement of electrolytes lost is the basis of cholera treatment. Cholera Patients are managed according to the degree of dehydration a Plans of A, B, and C.
- Rehydration therapies include Oral rehydration solution (ORS) and intravenous fluids namely Ringers lactate or Hartmann solution.
- Resomol solution is used for the malnourished children
- Monitoring or observation of patients is crucial in all treatment plans. It should be done frequently (every 30 minutes) and findings recorded on the standard monitoring form for cholera patients Annex 9.

Note: 0.9% Normal saline or 5% Dextrose are not recommended for correction of dehydration due to cholera. Dextrose 50% is used to correct hypoglycaemia.

5a.2.1 No Dehydration Treatment Plan A

- The patient should be observed and health educated then discharged home on recommended antibiotics, zinc tablets for children below 5 years of age and Oral Rehydration Salt (ORS).
- The use of homemade safe fluid preparations such as fruit juices, porridge, yoghurt, milk and other fluids are encouraged.

Good patient care to promote quick recovery



Picture 7: Mbale district; Busiu HC-IV CTU (2008) and Namatala HC_IV CTU (2015), the health workers quickly corrected rehydration as recommended in the national cholera guidelines.

- Explain to the patients and attendants the three rules in treatment of cholera at home for Plan A as below:
 1. Give ORS or other fluids after every motion until diarrhoea stops
 2. Feed the child or patient
 3. Come back to the health worker or bring back the child, if necessary.
- Give patients enough ORS packets to complete rehydration, and for 2 more days.
- Teach them how to prepare ORS solution, its administration and safe keeping.
- To mix ORS follow the instructions on the packet as below;
 - i. Add one sachet of ORS to one litre of drinking water
 - ii. Mix thoroughly, and start giving to the patient.

5a.2.2 Some Dehydration - Treatment Plan B

A patient with moderate rehydration is managed with ORS. Approximate quantity of ORS solution to be administered in the course of the first 4 hours are shown below:

Table 2: Rehydration protocol for Plan B

Age	<5months	6–11 Months	12-23months	2-4 yrs	5-14 yrs	15+ years
Weight	<5kg	5-7kg	8-10kg	11-15kg	16-29kg	30+
ORS ml	200-400	400-600	600-800	800-1200	1200-2200	2200-4000
Zinc tablet 20 mg (tab)	1/2 tab for 10 days	1 tab for 10 days	1 tab for 10 days	1 tab for 10 days	Not recommended	

- Maintenance of hydration status of a patient after intensive rehydration is important
- After correction of rehydration, manage the patients using plan A give ORS and encourage the patient to drink extra fluids orally all the time
- Also administer the recommended antibiotics.

5a.2.3 Intravenous Therapy Treatment Plan -C for severe cases

- Ringers lactate or Hartmann solutions are the preferred IV fluids. In case of lack of Ringers lactate, Normal saline (0.9%) is used together with ORS solution to replace the missing electrolytes.

- Plain glucose (5% Dextrose) solution is not effective in rehydrating cholera patients and not recommended.
- When IV rehydration is not possible and the patient cannot drink, ORS solution can be given by nasogastric tube. However, nasogastric tubes should not be used for patients who are unconscious.
- Give IV fluid immediately to replace lost fluid. If the patient can drink, give ORS by mouth simultaneously while the drip is being set up.
- The recommended amount of ORS for different age groups and the time of administration are shown in the table below:

Table 3: Quantities of the recommended IV fluids for severe dehydration

Time and respective IV fluid(Ringer lactate)			
Age	First 1hr	Next 5 hrs	Total in 6hrs
Less than 1 year	30 ml/kg	70 ml/kg	100 ml/kg in 3 hrs
Time and respective IV fluid(Ringer lactate)			
Age	First 30 min	Next 2.5 hrs	Total in 3hrs
1 year and older	30 ml/kg	70 ml/kg	100 ml/kg in 3 hrs

5a.2.4 Other considerations during rehydration and thereafter

- Give ORS solution (about 5 ml/kg per hour) as soon as the patient can drink, in addition to IV fluids
- Reassess the patient after 3 hours (infants after 6 hours), using the table above on assessment and classification of dehydration

- If there are still signs of severe dehydration, repeat the IV therapy once more.
- If there are signs of some dehydration, continue as indicated on some dehydration (Plan-B)
- If there are no signs of dehydration, maintain hydration by replacing continuing fluid losses.
- Maintenance fluids equivalent to amount lost through vomiting and diarrhea is given to prevent further dehydration of the patient after intensive rehydration
- Manage the patients using plan B calculate amount per kg body weight, observe and monitor patient for 24 hours. If patient can take orally give ORS and encourage taking orally.
- Monitor the patient very frequently. After the initial 30 ml/kg have been given, the radial pulse should be strong and blood pressure should be normal: If the pulse is not yet strong, continue to give IV fluid rapidly. Record the vital observation using [Annex 10](#).

5a.2.5 Rehydration for malnourished children

Correction of rehydration in children with severe malnutrition is challenging and needs special precaution to avoid fatal outcome and other complications. *Resomal* is the recommended oral rehydration fluid for malnourished children.

5a.3 Treatment with Antibiotics

Give oral Antibiotics to all patients including their attendants to reduce the duration of symptoms and spread of the pathogen. Recommended antibiotic are given based on culture and sensitivity results. Based on the ongoing microbial

monitoring at CPHL (Kampala) the following antibiotics indicated in table 4 are recommended.

Table 4: Recommended antibiotics and zinc dosages

Antibiotics	Under 12 year children	Adults	Remarks
Tetracycline (250mg capsules or tablets)	Not recommended	500mgs four times daily for 3 days	First line medicine and not given in pregnancy and breastfeeding
Doxycycline (100mg tablets or capsules)	Not recommended	300 mg single dose	Same as tetracycline. Poorly tolerated by the stomach
Erythromycin (250mg tablets)	30 mg / kg/day	500mg four times daily for 3 days	First (1 st) line medicine which is used in pregnancy, breastfeeding and children under 12 years
Ciprofloxacin 250 or 500mg tablets	Not recommended	500 mg twice daily for 3 days	Second (2 nd) line medicine
Zinc (20mg tablets)	Dosage as in section 5.2.2 for 10 days.	Not recommended	Recommended for under-five children only Malnourished children on RUTF should not be given zinc tablets as the foods contain Zinc.

Table 5: Administration of Erythromycin 250mg tablets

Age or gestation	Less than 1 year	1 -5 years	5-12 years	Adults	Pregnant women
Quantity	¼ tab 4 times /day 3 days	½ tab 4 times /day 3 days	1 tab 4 times /day 3 days	2 tab 4 times /day 3 days	2 tab 4 times /day 3 days

Note:

Selective chemoprophylaxis is **NOT** recommended for health workers who work in the CTU **UNLESS** they have household contacts.

5a.4 Mass chemoprophylaxis

- Mass administration of antibiotics to the community is NOT recommended in controlling a cholera outbreak as it may worsen the situation through false confidence.
- Nevertheless, chemoprophylaxis may be useful when a cholera outbreak occurs in a closed population, such as a prisons, mental health institutions, child care homes, boarding schools, barracks (police and army), IDP/Refugee camps.

5a.5 Anti-diarrheal, metronidazole and antiemetic

The following medicines are not recommended in management of cholera patients and **MUST NOT** be administered:

- Medicines such as *Metronidazole*
- Anti-emetics such as *largactil*
- Anti-diarrhea such as *imodium*

These medicines do mask the signs and complicate the illness may lead to toxemia and death

5a.6 Feed the patient

Do not withhold food to patients with diarrhea. However patients should be encouraged to eat highly nutritious foods to replace the lost body calories.

5a.7 Health education for patients

Usually the patients and their families have inadequate information on prevention and treatment of cholera. It is not uncommon to find a household with more than one family member suffering from cholera.

The most important messages to prevent the family members from being infected are:

- Wash hands with soap and water after:
 - taking care of patients touching them, their stools, their vomits, or their clothe
 - using toilets, before preparing and eating or handling foods,
- Wash fruits and vegetables using clean safe water before eating them
- Keep foods covered and eat hot foods
- Boil or add chlorine to all drinking water and keep it in covered in clean containers with narrow outlet
- Use latrines to dispose all fecal materials
- Keep the home clean. Discard all foods, drinks, water in the household which could have been contaminated during the process of care of the patient at home
- **Do not** contaminate the water sources by bathing in them or washing patients' clothes in and near the water source.

- Seek care for any-one who develops cholera like symptoms and signs and use ORS in case of diarrhea while at home
- Air and sun drying of all patients linen
- Dig and use latrines for disposal of feaces and keep them covered all the time.

ASSESSMENT OF THE OUTBREAK RESPONSE

1. Do the flowcharts illustrate proper management of cholera cases to health care workers?
2. Do the flowcharts provide clear information on how to assess and categorization of dehydration by providing clear information on the treatment protocol according to the status of the patient?
3. Did the patients receive treatments? (Recommended fluids for rehydration and antibiotics based on antimicrobial resistance patterns)?
4. Did infants and children below 5 years receive the recommended dose of zinc?
5. Were patients and their families informed of the preventive measures to take at the treatment site and household?
6. Were the cholera patients isolated from other patients (with special latrines)?
7. Were the health care workers aware of the infection prevention and control measures necessary to avoid cross infection (hand-washing, isolation ward)?
8. Were the attendants educated and given recommended antibiotics for contacts?

Prevention of Deaths : Reducing Case Fatality Rate

KEYWORDS

Cholera Treatment Units, Supplies, Training of Professionals

USEFUL INFORMATION FOR PREVENTION, PREPAREDNESS AND CONTROL

All health care facilities that might manage cholera cases should have sufficient supplies that are able to cover the first few days before the arrival of more supplies.

These “pre-positioned” supplies should include both IV fluids and ORS, antibiotics, chlorine, giving sets, cannulas, adhesive plaster, Cary-Blair media, spray pump, gumboots, blankets, basins, buckets, gloves, aprons, body bags(polythene), biosafety boxes, hand-washing tanks, chlorine storage tanks, syringes and needles and disposal pits, refer [Annex 8](#) for supplies requisitions.

A needs assessment and inventory of supplies should be completed before any anticipated cholera outbreak. In addition the health professionals need specific training for effective and efficient management of cholera cases and deaths. The district and MOH should develop a training micro-plan to achieve a target of 90% of all the health care workers trained.

PRIORITIES DURING INTERVENTION

5b.0 Case Fatality Rate (CFR)

- The Case Fatality Rate is the number of the deaths from cholera divided by the total cases seen during the period and multiplied by 100 to get a percentage. This is a very important indicator for the quality of health care.
- A Case Fatality Rate greater than 1% is generally considered to be high. If the CFR exceeds 5%, an investigation should be conducted and appropriate corrective action taken
- High CFR may be the result of inadequate case management or bias (e.g. underestimation of the number of cases or inclusion of deaths from other causes).

5b.1 Staffing Of Cholera Treatment Units

Cholera Treatment Units (CTU) can be a specific ward in a health facility or special units set up to treat cholera patients in an emergency situation. During an outbreak, CTUs must be functional 24 hours a day. A plan for rotation of staff therefore needs to be established.

If there are too few personnel with appropriate training, health care workers who have previous experience of cholera outbreaks or who have received adequate training should be mobilized to provide on-site training and supervision of the less experienced personnel.

5b.2 Oral Rehydration Salt (ORS) Corner

- The community should be sensitized on the importance of early treatment using ORS as soon as diarrhea starts and immediate reporting to health facilities
- Where the health care facilities or CTU is less accessible, Oral Rehydration Treatment corners (ORT corners) should be established in the community to treat patients with No dehydration
- The community leaders should liaise with district or sub-county health officer to isolate and appropriately manage suspected cholera cases.
- Information about the location of CTU for severe cholera cases should be provided to the community
- Sufficient stock of ORS should be supplied to community health workers in affected areas so as to ensure early initiation of treatment. The LC.1 Secretary for health can supervise or participate in the distribution of ORS to communities at the highest risk
- The location of CTUs and ORT corners should be selected according to the attack rate. In isolated health care facilities provision of supplies and drugs to treat the first 20-30 patients should be part of preparedness measures.

5b.3 Monitoring of Patients with Severe Cholera

Monitoring and regular reassessment of patients for the following is crucial. The monitoring form ([Annex 10](#)) should be filled daily for every patient.

- Blood pressure
- Pulse
- Temperature (cholera usually results in hypothermia, if the temperature is higher than expected there might be associated with pathology, e.g. malaria)

- ▣ Respiration
- ▣ Dehydration status
- ▣ Frequency and appearance of stools
- ▣ Ability to pass urine or not in 2 hours, continually observe the volume of urine passed
- ▣ State of consciousness
- ▣ General condition of the patient for complications and other medical conditions.

Monitoring of cholera patients



Picture 8: Kitgum district (2006), Health workers conducting regular monitoring of patients vital signs and parameter



Picture 9: Mulago CTC (2003), Encouraging cholera patients to drink ORS is a key component of health care.

5b.4 Common Treatment Complications

The commonly encountered complications can be corrected and prevented.

Table 6: Common treatment complications and how to prevent them from occurring

Complication (signs)	Cause	Corrective measure	Prevention
1. Pulmonary Oedema (difficulty in breathing, cough, basal crepitations)	Excessive IV fluid administration	Stop IV fluids	Adhere to IV fluid administration regiment (schedule), monitor fluid input and output
2. Renal failure (Anuria or no urine) in 24 hours	Too little IV fluid given to correct dehydration and shock	Consult a Medical Officer for appropriate renal care	
3. Hypokalemia (irritability, confusion, distended abdomen, no bowel sounds, tachycardia or arrhythmias)	Administration of non-recommended IV fluids (5% Dextrose, normal saline), keeping patients for a long time on IV fluids and delay in giving ORS	Administer Ringer lactate	Use Ringer lactate. Give patients fruits such as sweet banana. Use ORS as soon as the patients are able to drink
4. Hypoglycaemia (Irritability, restlessness, confusion, yawning, aggressiveness, delirium, convulsion, coma)	Not feeding the patient.	Administer 20 mls of 50% dextrose as a bolus followed by 30mls in a drip of RL. Give ORS solution and feed the patient regularly.	Start cholera patient on ORS as soon as able to drink and feed the patient regularly.

Note: *Hypokalemia and hypoglycaemia are common in children with malnutrition therefore rehydrated them using with Ringer lactate and not other fluids.*

5b.5 How to discharge patients from CTU

5b.5.1 Discharge criteria

- When the patient is stable i.e. no more diarrhea and vomiting in 24 hours and demonstrates signs of clinical improvement i.e. normal BP and Pulse

5b.5.2 Discharge Package

Cholera patients should be discharge with the following items

- Adequate ORS sachets
- Chlorine tablets for treatment of water
- Disinfectant / Detergents e.g Jik,
- Health education to on prevention, care seeking and feeding practices

5b.6 Handling of the Dead, Burial and Funerals

The dead are associated with serious spread of infection. Therefore the following burial and funeral precautions must be observed:

- Burial must be carried out as fast as possible
- Disinfect body of the deceased with 2% chlorine or JIK solution
- Block the mouth and anus with cotton soaked in chlorine solutions/JIK
- Beddings (including mattresses) and clothing of the deceased if still desired by the family members should be disinfected with 2% chlorine; otherwise they should be burnt
- Particles like stool or blood clots are to be disinfected by soaking with 2% JIK before washing
- The contaminated materials may simply be burned
- Burial should be supervised by trained health workers.

Supervised Burial



Picture 10: The health workers were supervising the burial following massive deaths. Local leaders were also present

- Big funeral gatherings and feasting in cholera affected areas should be discouraged.
- Transfer of the body to another village, sub-county etc for burial should be discouraged
- All deaths suspected to have been due to cholera must be reported to health facilities, local leaders and higher authorities immediately.

ASSESSMENT OF THE OUTBREAK RESPONSE

1. How was the case-fatality rate (CFR) calculated? Was there any risk of bias?
2. Was the CFR over 1%? Was there any obvious reason to explain this higher CFR; low accessibility to health care service? Inconsistent case management? underlying factors such as malnutrition?
3. Have health workers been trained to manage patients with cholera?
4. Were appropriate IV fluids, ORS, antibiotics and zinc available?
5. Have special CTUs been set up in order to provide quick treatment to cholera patients and to avoid over-burdening other hospital wards?
6. Was there adequate observation of patients with severe cholera (pulse, dehydration symptoms, respiration, and urine)?
7. Were the cholera treatment units and oral rehydration therapy (ORT) corners accessible? Were there any geographical limitations on accessibility or cultural, linguistic, or economic barriers?
8. How were dead bodies and funerals or gathering handled

CHAPTER 6

Infection Control in a Health Facility

Isolation and disinfection



Picture 11: Namayingo district (2014), Mutumba HC-III CTU. The health worker is putting Jik container away from direct sunshine.

Infection Control in a Health Facility

KEYWORDS

Isolation of Patients, Disinfection, Disposal of Wastes, Hand-Washing, Restriction of Movements

USEFUL INFORMATION FOR PREVENTION, PREPAREDNESS AND CONTROL

It is important to isolate all suspected and confirmed cholera cases. There should be restriction of movement in and out of the CTU for the attendants and any other persons.

There should be appropriate disinfection of patients, their belongings and CTU environment. The CTU should have adequate water, hand washing facilities, waste disposal, hygiene facilities and sanitation.

Protective wear should be used when handling infectious materials, buckets and dead bodies.

Health education on prevention of cholera to all patients and attendants should be done.

PRIORITIES DURING INTERVENTION

6.0 Establishment of the CTU

To ensure isolation and effective management of the cholera patients, a special area needs to be identified and set up to control the spread of the disease. The place is called a cholera treatment unit (CTU).

- In refugee or IDP camps where there is no health care facility, a CTU can be set up using tents.
- In communities where nearby health facility has too small space, the CTU can be established inside the in a community building e.g. a school or church.
- Essential medical and non-medical supplies, medicines must be at hand to be able to efficiently respond to the outbreak, [Annex 8](#): National cholera supplies kit
- Cholera treatment units should be ready before an outbreak occurs. This necessitates identification of suitable sites, pre-position of supplies, stocks of drugs and other materials, and organization of patient flow.
- Individual job descriptions for personnel in CTU should be prepared and communicated to them in advance.

6.1 Cholera Treatment Unit (CTU)

During an outbreak, district cholera task force should review the need for setting up a cholera treatment unit if the attack rate is above 5%.

6.1.1 Components of a Good CTU

The CTU should have the following areas:

- *Reception area:* Assessment and Classification: register patients, Assess for dehydration status and classify for treatment
- *Treatment area:* wards for admission, rehydration, treatment, observation,
- *Convalescent area:* observation, health education and discharge
- *Medicine and supplies store, dispensing area, ORS preparation area, Jik preparation area, decontamination and disinfection.*

(**Note:** One person should be in-charge of preparation of ORS and encouraging the patient to drink it. Also a person should be assigned the mixing of chorine and infection prevention in the CTU).

The components of a CTU are in [Annex 12](#).

6.1.2 Key tasks that should done in a CTU

- Patient care (rehydration, treatment, hygiene, feeding)
- Prevention and hygiene
- Kitchen for food preparation
- Water treatment
- Preparation of chlorine solution
- Hand washing facilities at critical points
- Clothes washing facilities, laundry.
- Health education
- Health education activities inside the CTU and at patient's home by disinfection teams
- Active case finding in the refugee or IDP, Camps/villages

- Waste and environment
- Safe waste disposal (incinerator, dustbins);
- Cleaning and disinfection of the CTU, morgue/mortuary
- Security
- Watchman for information and patient flow control;
- Fences for restricted visitors
- Protection of stocks (food, drugs, supplies)

6.1.3 Identifying a site for a CTU

Location or siting of a CTU has long-term implications and should be considered carefully. During planning process, expected number of patients should be computed using attack rate. Otherwise an improperly sited CTU can cause many problems. The following aspects should be considered:

The ground should have a gentle slope for easy drainage,

- The CTC should be sited away from crowds such as food distribution areas, markets, play grounds, schools etc.
- The CTU should have good access by road
- Water supply to the CTU should flow by gravity if possible
- The space should be adequate for future expansion of the CTU if required,
- The area should facilitate maintenance of high standards of sanitation with good lighting, drainage and provision of clean water.

6.1.4 Setting up a CTU

- The use of simple, already existing facilities should be considered whenever possible to minimize cost and time needed for construction. However agreement must be reached with local authorities to vacate the existing building such as schools etc.
- Adapting existing health facilities into a CTU is usually the quickest option. In some instance this can require suspension or relocation of other services to nearby health facilities or OPD
- If the health facility space is inadequate construct a special CTU with tents and/or local materials to supplement the existing ones. The decision to open such a unit should be taken early (e.g. when 5 new cases are being admitted daily)
- If the complete construction of a CTU is not an option, but the site is already chosen, it is advisable to lay down the “foundations” for a CTU. This is called a “Skeleton CTU”
- Some of the essential parts of a CTC take long time to build and should therefore be part of the skeleton CTU. The components include: fencing; latrine-pits- 1/ 25 patients latrine and bathroom; soak-away pits; raised platform (s) for water tank(s); concrete footbaths; cooking stoves garbage pits; and lighting

The organization of the CTU is meant to offer the best care to patients but also to control the spread of the infection. A good fence around the CTU is necessary to reduce the number of visitors.

6.1.5 Standard Deployment of Staff in CTU

Three teams of 3 people each are required for every 20 beds (a team composed of 1 qualified health worker and 2 cleaners) to provide around-the-clock coverage. Roles and tasks of the deployed personnel should be clearly defined.

6.16 Restriction: of movement within the CTU

- All movement into and inside the CTU should be limited. When movement is necessary between units of the CTU, make sure that people walk through footbaths (disinfection) and are sprayed. Put a guard next to each footbath to enforce people walking through. There should be one way flow of patients inside the centre from reception/assessment unit to the ORT-or IV unit.
- Movement inside the CTC can be limited by having only one entrance and a strong fence around the CTU and between the different units. Guards should prevent people other than patients, attendants and staff from entering. A movement is reduced when food is provided to patients, staff and attendants.
- The rule of one attendant one patient should apply. This attendant will stay during the period the patient is sick. Upon entering the CTU, patients and attendant should be washed. When the logistical means are available the clothes should be tagged, washed and returned later to the patients.

Cholera Treatment Unit



Picture 12: Restriction and disinfection are important to prevent spread of infection

6.1.7 Disinfection inside the CTC

- It is important to use the right chlorine solutions for the right use: preparation and use of the various chlorine solutions is shown in [Annex 11](#).
- In addition all containers with chlorine solution must be clearly labeled and controlled. These solutions should also be protected from direct sunlight since chlorine is affected by light.

6.1.8 Protection of Chlorine Solutions from direct sunlight

Protection chlorine disinfectants from direct sunlight



Picture 13: Mulago CTU (2003), tanks containing tanks with labels of common chlorine solutions found in CTU 2%, 0.2 and 0.05%

- Spray pumps should be filled with appropriate solutions for the purpose. At the entrance and for spraying on the patient's body and staff 0.05% chlorine solution should be used.
- Disinfect feet in special footbaths with a 0.2% chlorine solution, placed at all entrances of the tents and buildings. By constructing a horizontal bar 1.5 meter
- Above the bath, people will be forced to go through the bath. They will have to bend and cannot jump across the bath. As the footbath has to be emptied and refilled daily, it should be connected to a drainage system.
- Protective gear and protective clothing's
- Appropriate protective (gum boots, gowns, plastic apron and gloves) should be provided for the staff. Gum boots, gowns, plastic apron should NOT be MOVED OUT OF the treatment centre and should be washed every day after duty.

- Face masks are NOT required as Cholera is not transmitted by the air-borne route. Manual Gloves should be provided to the people involved in cleaning.

6.1.9 Disposal of Feaces and Vomitus

- Individual defecation for patients in the acute stage of the disease is essential and unavoidable. Provide buckets (or holes) under the Cholera beds and disinfect them regularly with 0.2% chlorine solution
- In every observation, oral rehydration and IV unit two latrines should be made. Staff can only use the latrine in the staff unit. Latrines for patients should be cleaned after each use if necessary. Plastic or other squatting plates are ideal to facilitate cleaning.
- Facilities should be made in such a way that cleaning is easy and thorough. When the floor is made of wood, plastic sheeting is a must.
- When beds are absent, mats can be used.

6.1.10 Disposal of Corpses

- Disinfection and disposal of corpses was discussed under case management
- Corpses should never be handed over to the family without proper disinfection.

6.1.11 Disposal of Solid Waste

- Collect waste in a garbage bin with a cover and burn collected waste at the end of each day.
- If flies are attracted by refuse, spray tents, latrines, etc. with *delta-methrine* (insecticides).

- Sharp objects and needles should be collected in a bucket with a tight fitting cover. This bucket should be situated at the entrance of each unit. The contents should be disposed into a medical pit constructed for that purpose or a pit latrine.
- Enforce safe disposal of medical waste by disinfecting, burning or incineration. Make people aware of the risk of running over (HIV and other pathogens) infected needles, so used needles must be disposed of into biosafety boxes, which also have to be incinerated.

6.1.12 Waste water Control

- In the design of the CTU, disposal of waste water and rain water should be taken into account. The CTU should preferably be built on a gently sloping ground.
- Waste water is surface water collected from tap stands, footbaths, kitchen, bathrooms as well as water used in disinfecting floors, washing hands, clothes and corpses.
- Water used in cleaning should flow away easily inside each construction. This is facilitated by constructing a small channel in the middle of the tent or building. Plastic sheeting on the floor is ideal.
- Around each construction a simple drain should be dug that diverts waste water to a covered soak-pit. If the soil is not permeable, small soak pits will not function properly. It will be necessary to dig a big soak-pit, at a distance of 10 metres from the CTU.
- Make sure that no one has access to the water in the soak pits by making a fence and a cover.
- If money and time is available a cover over the ditches will improve the hygiene of the drainage system.
- On the outside of the CTU a large channel should be excavated around the facility in order to prevent run off

entering the CTU. The water from this channel is less contaminated and can be diverted into a soak pit.

6.2 Important things to observe during closure of CTU

- The latrines, drainages and soak pits should be filled and compacted with marrum. The temporary bed (wooden if used) should be burnt.
- All the material leaving CTU should go to store or another CTU but not on ward with patients having other medical conditions. When neither is possible then burning all should be burnt in the CTU.
- Finally, the compound should be disinfected by spraying with 0.2% chlorine solution.

ASSESSMENT OF THE OUTBREAK RESPONSE

1. Were the cholera treatment units located close to the most affected communities?
2. Were there hand-washing facilities in the cholera treatment centre? Were the patients' relatives washing their hands every time they leave the centre?
3. Were the cholera treatment units organized in four areas of reception/screening and observation, hospitalization, convalescent room for ORS treatment, neutral area (for kitchen, stocks of material, etc.)?
4. Were measures in place for the safe disposal of excreta and vomitus? Were there special latrines for cholera patients who can walk, separated from latrines used by the rest of the patients?
5. Was there enough water to cover the daily needs of patients, staff and attendants as recommended?
6. Were buckets, latrines, clothes, and bedding properly disinfected?
7. Were cholera cots available?
8. Involvement of the community to limit the spread of disease

CHAPTER 7

Health Promotion and Education



Health Promotion and Education

KEYWORDS

Health Education - Appropriate Messages - Cultural Acceptability

USEFUL INFORMATION FOR PREVENTION, PREPAREDNESS AND CONTROL

Ignorance on the mode on preventive method is one of the factors responsible for occurrence of diseases. Knowledge on mode of transmission of cholera organisms is key in prevention of cholera outbreaks. School children can play an important role in educating their peers and community members.

Various communication channels should be used to educate the masses. These should include community meetings, fm radios, print media among others.

To strengthen cholera preparedness, control and prevention, it is valuable to organize communities in high-risk areas through identification of gaps in knowledge and practices to inform the kind of social mobilization interventions required.

PRIORITIES DURING INTERVENTION

7.0 Health Education and Social Mobilization

Cholera outbreak can be quickly controlled when the public understands how the disease is spread, prevented and controlled. Active engagement of the key stakeholders through advocacy, social mobilization and community participation is crucial in empowering the population to interrupt and control an outbreak.

This is done through;

- Orientation of district and community leaders
- Communication through radio, posters, talks show using the language the community understands
- Organize talk shows/dialogues/barazas in places where people are usually waiting (health care facilities, hairdressers, etc.)

7.1 Social Mobilization before an Outbreak

Social mobilization before an outbreak is important in preparing communities with messages on prevention and control. This is particularly important in areas deemed “hot spots”. The preparatory activities are;

- Orientation of community leaders in prevention and response
- Training of village health teams/community health extension workers on key prevention messages
- Distribution of IEC materials
- Cholera prevention messages using different reliable media channels.

7.2 Social Mobilization during an Outbreak and Active Case-Finding

Social mobilization at the community level, helps in disseminating Community case definition that enable the community to identify cases through:

- Detection of cholera patients at an early stage of the disease
- Advice to be given to family members and the community about protecting themselves from contamination

7.3 Key Messages to Give to the Community

- Cholera is a serious disease but can be prevented
- Everyone is at risk
- Washing hands with soap and water or ash or lime before cooking, before eating and after using the latrine kills the germs and prevents the spread of cholera
- Boiling or chlorinating drinking water kills cholera germs and prevents the spread of cholera
- Provide, use and keep the latrine clean
- Cook food prepared well, keep it well and eat it while still hot
- Do not defecate or urinate in or near a source of drinking water
- Do not bath or wash your clothes or pots and utensils in the water source
- Keep the areas surrounding a well or a hand pump clean.

7.3.1 Individual and Family level messages

a) Messages on Personal hygiene

- Wash your hands with soap, ashes, or lime
- Before cooking, before eating and before feeding your children
- After using the latrine or cleaning your children after they have used the latrine
- Wash all parts of your hands front, back, between the fingers, under nails
- Use the latrine to defecate. Keep the latrine clean.

b) Messages on Food and drinks

- Cook raw food thoroughly
- Eat cooked foods immediately
- Store cooked food carefully in refrigerator
- Reheat
- Cooked food thoroughly
- Avoid contact between raw food and cooked food
- Eat fruit and vegetable you have peeled yourself
- Keep all kitchen surfaces clean
- Always wash your cutting board well with soap & water
- Wash your utensils and dishes with soap and water
- Cook it - peel it - or leave it.

c). Messages on Safe handling of water

Even if it looks clear, water can contain cholera germs. Therefore:

- Boil, or add drops of chlorine to the water before drinking
- Keep drinking-water in a clean, covered pot or bucket or other container with a small opening and a cover. It should be used within 24 hours of collection.
- Pour the water from the container - do not dip a cup into the container
- Do not defecate or urinate in or near a source of drinking-water
- Open wells must be covered when not in use to avoid contamination
- The buckets used to collect water should be hung up when not in use - they must not be left on a dirty surface
- The area surrounding a well or a hand pump must be kept as clean as possible
- Get rid of refuse and stagnant water around a water source
- Do not wash yourself, your clothes, or your pots and utensils in the water source- (wells, stream, river, or water hole). If dipping into the water container cannot be avoided, use a cup or other utensil with a handle.

Protection of water sources from contamination is important

Communities should not wash clothes in water sources



Figure 10: Kasese district (2015), washing in water sources one of the factors responsible for the spread of cholera

d) Messages for Community Leaders

Community leaders should guide the members to live healthy and on the following:

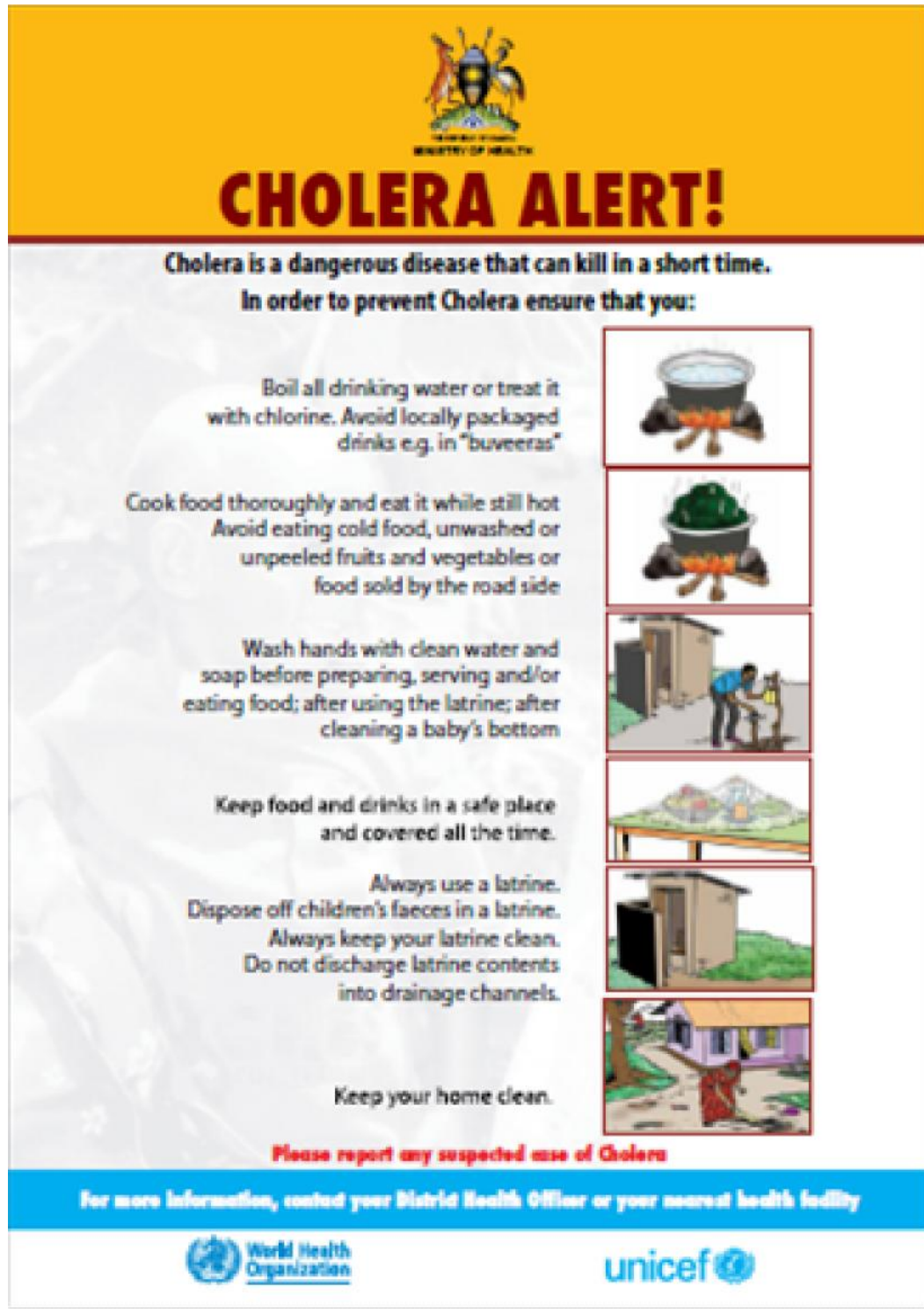
- The biggest danger of cholera is loss of water from the body. Do not panic, but act quickly. Drinking solution of oral rehydration salts made with safe (boiled or chlorinated) water
- Go immediately to the health centre. Continue drinking as you go

- Wash your hands after taking care of patients, touching them, their stools, vomit, or clothes
- Avoid contaminating a water source (wells, rivers etc) by washing a patient's clothes in it
- Stools and vomit from a cholera patient can be mixed with disinfectant (e.g. cresol)
- Disinfect the patient's clothing and bedding with a solution of chlorine (0.05%) or by stirring them in boiling water or by drying them thoroughly in the sun before and after normal washing.

Important message to note.

Social mobilization and Health education should continue throughout the year with intensification before the cholera season to enhance preparedness.

Sample cholera messages illustrated by a poster



The poster features a yellow header with the Kenyan coat of arms and the text 'MINISTRY OF HEALTH'. Below this is the title 'CHOLERA ALERT!' in large, bold, red letters. The main body of the poster is white with a background image of a person in a white protective suit. It contains several text blocks and corresponding illustrations. The text blocks provide instructions on how to prevent cholera, such as boiling water, cooking food thoroughly, washing hands, and using latrines. The illustrations show a pot of water boiling, a pot of food cooking, a person using a latrine, a covered table with food, a latrine building, and a person cleaning a home.

CHOLERA ALERT!

Cholera is a dangerous disease that can kill in a short time.
In order to prevent Cholera ensure that you:

Boil all drinking water or treat it with chlorine. Avoid locally packaged drinks e.g. in "buvemas"

Cook food thoroughly and eat it while still hot
Avoid eating cold food, unwashed or unpeeled fruits and vegetables or food sold by the road side

Wash hands with clean water and soap before preparing, serving and/or eating food; after using the latrine; after cleaning a baby's bottom


Keep food and drinks in a safe place and covered all the time.


Always use a latrine.
Dispose off children's faeces in a latrine.
Always keep your latrine clean.
Do not discharge latrine contents into drainage channels.

Keep your home clean.

Please report any suspected case of Cholera

For more information, contact your District Health Officer or your nearest health facility

 World Health Organization

 unicef

ASSESSMENT OF THE OUTBREAK RESPONSE

- 1) Was health education an important part of the outbreak response?
- 2) Were the messages spread illustrated by practical demonstrations (e.g. chlorination of water, preparation of ORS)?
- 3) Were the messages elaborated with the community?
- 4) Were the messages disseminated through community or religious leaders or through any channel that reaches the maximum of people with greatest impact on their behaviours?
- 5) Were the messages adapted to local cultural beliefs about the disease and to the capacity for implementing control measures in the community (e.g. if soap is unavailable, have ashes been recommended for washing hands)?
- 6) Have efforts been made to encourage the use of latrines?
- 7) Was there active case-finding in the community?
- 8) Were education messages given to the patients and their relatives in health care facilities and the community

CHAPTER 8

Environmental Health

Protection of water sources to ensure safe water access is essential



Picture 14: use of contaminated water, Water collected from open water sources is contaminated and should be boiled or chlorine treated

Environmental Health

KEYWORDS

Safe Water, Safe Food, Personal and Family Hygiene and Sanitation

USEFUL INFORMATION FOR CHOLERA PREPAREDNESS, PREVENTION AND CONTROL

Cholera is mainly transmitted by water or food. Simple measures to improve water quality, sanitary facilities, food preparation and distribution and basic hygiene practices can prevent cholera.

The following areas should be considered: Safe water, food safety, sanitation and hygiene, personal and family hygiene; municipal water supplies; other water supplies; solid waste; disposal of excreta and treatment of waste water; hospital sanitation; and long-term plans for improving water and sanitation.

Environmental Health: Safe Water

KEYWORDS

Water Quality, Testing, Boiling Water Chlorination, Useful Information for Cholera Prevention, Preparedness and Control

Water plays a very big role in the transmission of cholera. The water is usually contaminated by faecal matter containing *V. cholerae*. Unprotected water sources e.g. wells, springs, ponds, dams, lakes, rivers, streams and swamps can be the source of transmission.

A good inventory of all water sources, obtained through sanitary surveys (water quality surveillance) and safe water chain is useful for identifying potential risks of contamination.

Attention should be paid to the operation and maintenance of all water sources in the community to avoid communities resorting to unprotected water supplies. They should be encouraged to treat or boil their drinking water.

PRIORITIES DURING INTERVENTION

8a.0 Safe Water

Availability of safe water is key in prevention and control of cholera. Efforts should be made to ensure that communities have get adequate amount of safe water.

8a.1 Types Water Access Points

- There are various types of access to drinking-water: household connection, public standpipe, borehole, protected dug well, protected spring, rainwater collection, unprotected well, vendor, motorized borehole, tanker truck.
- Drinking-water might be contaminated by
 - contact with Hands and bodies of people who have cholera although show no symptoms
 - Contaminated articles such as buckets, cups, clothes
 - Faecal material (e.g. by infiltration into wells when the latrines are situated less than 30 metres away from the wells)
- The risk of water contamination varies according to the type water source.

8a.2 Contaminated Water Sources

- Unprotected water sources are often contaminated. Authorities at all level should ensure that these water sources are protected to reduce the risk of contamination.
- Treatment of the source may be the best way to prevent the spread of cholera in the community. Installation of

chlorine dispenser at the source is encouraged during outbreaks

- When the water source is too turbid it should be filtered before disinfecting. Alternatively, filtration and chlorination could be done at household level.

8a.3 Provision of Safe Drinking-Water

The conditions and practices of water collection, transportation and storage contribute to the safety of household water.

There is evidence that storage of water in a narrow-mouthed vessel with a protected dispenser (jerrican, spigot, spout) is much safer than storage in a wide-mouthed vessel (pot, tank).

To avoid contamination and ensure safe water;

- Drinking water should be kept in a clean covered pot or bucket. It is better to pour the water from the container than to use a potentially contaminated article (e.g. cup without handle) to retrieve the water
- Alternatively and better still, the bucket and the pot should be fitted with the tap to facilitate serving
- **Chlorine dispensers** should be installed at points of water collection and maintained all the time with the help of **village water maintenance committee** members or CHEWs.
- Communities should be encouraged to use chlorine tablets in areas where chlorine dispensers are not functional or when water is collected from untreated water sources.
- During cholera outbreaks, efforts should be made to subsidize national water from National water and sewerage cooperation

8a.4 Ensuring Water Quality

- The quality of untreated water should be assessed using field-testing kits. Drinking Water should contain less than 5 colony forming units(CFU)/100ml
- Throughout the safe water chain, quality checks should be made regularly, at source, during transportation and at storage (households)

8a.5 Household Water Treatment

Various methods of household water treatment are available: boiling, chlorinating, storage in improved vessels, solar disinfection with Ultra-violet light plus heat, Ultra- violet disinfection with lamps, chemical coagulation- filtration plus chlorine disinfection.

8a.5.1 Boiling

It is effective method of water treatment. However, it may not be practical when fuel is scarce its good at household level and for when disinfection by chlorination is not possible.

8a.5.2 Making Water Safe by Chlorination

Water is treated using chlorine-releasing agents such as tablets or Powders. It is a very effective method and can provide safe water to big population. **Chlorine dispensers** employ this method

Make stock solution (1% by weight chlorine solution). This is prepared by mixing 15gms (table spoon full) of HTH chlorine (Calcium hypochlorite 70%) or 250mls of sodium hypochlorite 5% (also called JIK) in 1 litre. Store stock solution in a cool place

The container should be covered and kept away from light.
Add stock solution to water to make it safe.

The amounts of water which can be made safe and required volume of stock solution are shown in the table below.

Table 7: Amount of stock solution required for water treatment

Amount of water made safe	Volume of stock solution required
1litre	3drops
10 litres	6mls
100 litres	60 mls

Allow the resultant water to stand for 30 minutes before using it. The residue chlorine in this water should be between 0.2-0.5mg/litre.

Note: If water is turbid filter it before chlorination or boil it vigorously instead of chlorination.

ASSESSMENT OF THE OUTBREAK RESPONSE

- 1) Have the different sources of contaminated water been identified?
- 2) Have these sources been disinfected during the outbreak?
- 3) If wells were chlorinated, was there regular monitoring of residual chlorine?
- 4) What measures were recommended to avoid contamination of water?
- 5) Was the community informed about preventing water contamination?
- 6) Where chlorination of a water source was not possible, was there any programme to ensure safe drinking-water at household level?
- 7) Were chemicals for water disinfection (chlorine compounds) available in the local market at affordable prices?
- 8) Was there any system for providing safe water to high-risk communities during the outbreak?
- 9) Did the population receive a supply of at least 20 litres of safe water per day per person?
- 10) Were health workers properly trained to teach local people about hygiene and disinfection techniques?

Environmental Health: Safe Food

KEYWORDS

Food Preparation, Hygiene In Markets, Cooked Food, Useful Information for Cholera Preparedness, Prevention and Control

USEFUL INFORMATION FOR PREVENTION, PREPAREDNESS AND CONTROL

Food has been implicated in several cholera outbreaks as a vehicle for cholera transmission. Special attention must be paid to food safety at social gatherings-marketplaces, parties, funerals, meetings etc.

During cholera outbreaks ban on food vending along the roads and streets should be imposed. Sale of locally prepared and packaged drinks, cold foods should be discouraged.

PRIORITIES DURING INTERVENTION

8b.0 Safe Food

Eating contaminated food is one way in which persons get cholera. It is important to prevent food from being contaminated.

8b.1 Common Sources of Food Contamination

- Drinking-water that has been contaminated at its source (e.g. by faecally contaminated surface water entering an incompletely sealed well), during transport and/or supply, or during storage (e.g. by contact with hands soiled by faeces)
- Ice and juices made from contaminated water and locally packaged *buveera* juice
- Cooking utensils washed in contaminated water
- Food contaminated during or after preparation. Moist foods (e.g. milk, cooked rice, lentils, potatoes, beans, eggs, and chicken), contaminated during or after cooking/preparation and allowed to remain at room temperature for several hours, provide an excellent environment for the growth of *Vibrio cholerae*.
- Seafood, particularly crustaceans and other shellfish, taken from contaminated water and eaten raw or insufficiently cooked or contaminated during preparation
- Fruits and vegetables grown in wetlands or preserved/stored in drainage channels (common in urban areas flooded with sewage -Nakivubo drainage channel, Natete, Namuwongo, Bwaise suburbs of Kampala city).

8b.2 Food handling and hygiene practices

- Wash hands before handling of food
- Not mixing raw food with ready to eat food
- Medical and physical examination of food handlers
- Regulation of food handlers (abolish food hawking)
- All food eating places that do not meet the minimum public health standards should be closed.
- All food establishments should have cold and hot water.
- Avoid communal eating during outbreaks
- Regular inspection of food eating premises

8b.3 Infant Feeding

- Breast feeding should be continued even when an infant has cholera.
- Feeding utensils for infants should be kept clean and sterile at all times.
- Breast feeding mothers should keep proper hygiene
- Proper cooking of infant food.

ASSESSMENT OF THE OUTBREAK RESPONSE

- 1) Was the supply of water adequate for street food vendors (acceptable quality and sufficient quantities for drinking, washing food and hands, cleaning utensils)?
- 2) Was there any regulation to ensure that minimum standards of hygiene were observed by food handlers during the outbreak? Was the inspection of food handling practices effective?
- 3) Were street sales stopped during the outbreak? Have restaurants been closed?
- 4) Is there any regulation to ensure minimum levels of hygiene for food products in the marketplace?
- 5) Are any local dishes made with raw seafood or raw fruit or vegetables?
- 6) Are food handlers who sell raw or partially processed animal products for immediate consumption required to display a sign that informs the public of the increased health risk associated with consuming such food?
- 7) Are latrines and hand-washing facilities available in marketplaces?

Environmental Health: Personal and Family Hygiene

KEYWORDS

Hand Washing, Disposal of Feaces in Latrines, Keeping Homes Clean

USEFUL INFORMATION FOR CHOLERA PREPAREDNESS, PREVENTION AND CONTROL

Personal and family hygiene is an important aspect for prevention and control of cholera. Communities need to keep their bodies and surrounding clean. They should also construct and use hygiene facilities like tippy tap for washing hands.

Gathering available information on current personal and family hygiene, knowledge and practices is very useful for successful intervention.

PRIORITIES DURING INTERVENTIONS

8c.0 Personal and Family Hygiene

Promotion of personal and household hygiene is important in cholera prevention in the families.

Emphasis should be put on households, public places (markets, butcheries, restaurants, hotels, Car parks, and recreation centers) institutions (schools, health facilities, and barracks). It is important for communities to construct and use hand washing facilities with soap/detergents for hand washing at critical times:

- After visiting the latrine
- After cleaning baby's bottom
- After cleaning an infected
- Before and after eating
- Before preparing food.

Simple observations of hygiene practices in the home may be obtained by a few site visits to selected areas. Emphasis should be on:

- Availability of hand washing facilities
- Presence of water, soap/detergent
- Use of hand washing facilities

8c. 1 Communal hand washing

Serial hand washing where community member wash hands in a common container should be discouraged. This practice promotes spread of infection by progressively making the water dirty. The first person is safe but the subsequent ones are not.

Environmental Health: Sanitation

KEYWORDS

Improved Sanitation, Education on Hygiene, Change of the Practices (Hand Washing and Latrine Use), Open Defecation Free Villages, Community Led Total Sanitation

USEFUL INFORMATION FOR CHOLERA PREPAREDNESS, PREVENTION AND CONTROL

Vibrio cholerea organisms are found in faeces of an effected person. The proper disposal of feacal matter will reduce the transmission of the organism construction and proper use of latrine is key in preventing the spread of the infection.

Authorities at all levels must have an updated inventory of existing sanitary facilities for planning and evaluation of the disease transmission risks.

Community-Led Total Sanitation (CLTS) which ignites change in sanitation behavior rather than constructing latrines for individual household should be promoted.

PRIORITIES DURING INTERVENTION

8d.0 Improvement of Sanitation

- The population should have access to an improved sanitation facility, traditional pit latrine, ecosan latrine and ventilated improved latrine. In addition where sewerage system, exist efforts should be made to connect households to a public sewer, connection to a septic tank, pour-flush latrine
- Kampala Declaration on Sanitation (KDS) should be implemented by all districts and leaders. The need for exemplary leadership should be emphasized
- Facilities such as bucket latrines, public or shared latrines, and trenches should be replaced as soon as possible by improved sanitation facilities
- Interventions to improve sanitation and hygiene should bring on board the following ministries/sectors: Education & Sports, Water and Environment, Local Government, Office of the Prime Minister, Gender, Labour and Social development, Internal Affairs, Foreign affairs, Defense, Works and Transport, Urban Development and Private sectors
- Sanitation in urban areas should address aspects of safe water supply and safe excreta disposal, solid waste management and proper management of drainage channels. Special focus should be given to slums, markets, parks, schools, daycare centres and other crowded places.

8d. 1 Community participation in preventive efforts

The community should be involved in all phases of implementation of on and off-site sanitation projects to avoid misuse or non-use of the sanitation facilities. This can be done through:

- Community-Led Total Sanitation (CLTS) that focuses on igniting a change in sanitation behaviour rather than constructing latrines or toilets.
- This approach does this through a process of social awakening that is stimulated by facilitators from within or outside the community.
- Community-Led Total Sanitation concentrates on the whole community rather than on individual behaviours. Collective benefit from stopping Open Defecation (OD) and can encourage a more cooperative approach.
- People decide together how they will create a clean and hygienic environment that benefits everyone.
- Local government and community leaders should support and encourage their communities to be Open defecation Free (ODF) Villages.

ASSESSMENT OF THE OUTBREAK RESPONSE

- 1) What percentage of the population was served with improved sanitation facilities?
- 2) Was there a good system in place for excreta management and disposal during the outbreak (latrine emptying and sludge removal from septic tanks)?
- 3) Were the sanitation facilities vulnerable to flooding or other natural disasters?
- 4) Could the sanitation facilities potentially contaminate any drinking- water sources?
- 5) Was consideration given to providing sanitation services for high- risk communities during the outbreak?
- 6) Were health workers properly trained to teach local people about good hygiene behaviours?

CHAPTER 9

Outbreaks in Institutions and congested settings



Picture 15: Landing sites, site such as the one in this picture require proper sanitation and hygiene measures to prevent disease outbreaks

Cholera in Institutions, IDP and refugee camps, prisons, hospitals, landing sites etc

KEYWORDS

Preparedness: Early Reporting, Appropriate Response, Collaboration with Leaders

USEFUL INFORMATION FOR CHOLERA PREPAREDNESS, PREVENTION AND CONTROL

These are communities that are at high risk of rapid spread of cholera. People living in special settings are more likely to be affected in big numbers because of the living conditions that predispose them infection.

These places are:

- Camps for the Internally displaced persons and refugees
- Special institutions such as schools, mental health facilities, day care facilities ,babies homes, hostels, destitute homes ,prisons, army barracks and detaches and police barracks
- Slums and landing sites

The underlying factors for high risk of spread in these populations are due to the high degree of interactions amongst community members. The high population density, overcrowding, lack of adequate water sources, poor sanitation, sharing of facilities like water, latrines, eating food prepared and served from a common point and ill health practices like open defecation.

PRIORITIES OF INTERVENTION

9.1 measures to prevent cholera outbreaks in special settings

Pre-outbreak interventions in schools, prisons, army barracks/detaches, police barracks, mental health facilities, day care facilities/baby homes especially for children under 5 years, street children/families

- Good surveillance system
- Health education on preventions of infection (personal, food, water safety, institutional hygiene)
- Inspection of the institutions

Once there is an outbreak of cholera, the attack rate can be as high as 5% or more than in congested areas and if the community and health care system are not prepared to manage cases, case fatality rate could be as high as 50%.

9.2 Prevention of cholera spread before and during outbreaks

These institutions are homogeneous in the conduct that guides them. Daily or weekly parades that are conducted are good for surveillance and mobilization for disease prevention. The following should be carried out.

- Health education on prevention of infection (personal, food, institutional hygiene) and management of cases should be provide
- During an outbreak, reporting of the sick should be more vigorous, on parades. The leaders should encourage members to report any person with diarrhea.

- Regular medical examination of cooks and health education are key in the prevention of cholera outbreaks.
- Measures to ensure adequate safe water should be available.
- Regular water testing should be done testing for quality and residual chlorine levels. Any identified gap should be corrected immediately.
- The institution heads should be oriented on cholera prevention and control.
- Schools should have adequate sanitation and hygiene facilities to prevent the transmission. The standard minimum for each 100 students is:
 - 1 latrine for girls
 - 1 latrine for boys
 - 1 hand washing facility at the each latrine
 - 4 jerrycans full of water each day for hand washing
 - 4 bars of soap each week for hand washing.
- For the barracks (army, police, and prisons) and schools the aim should be to have 1/25 persons per latrine stance
- Ensure safe disposal and treatment of waste-water, collection and disposal of solid waste measures should be taken to prevent large accumulations.
- Other requirements are similar to those for the schools
- In case a member in community or student develops cholera, the institution must be able to provide ORS or other home available fluids to prevent dehydration.

- The standard minimum for each 100 persons or students;
 - 10 packets of ORS
 - jerrycan of drinking water
 - 2 “tumpeco”
 - 2 teaspoons.
- As soon as a person develops cholera symptoms, they should be given ORS and taken to the nearest health unit and she/he should be drinking ORS on the journey
- The cases should be reported to district health authorities immediately
- The immediate contacts should be visited by the health workers or CHEWs and given appropriate health education and chemoprophylaxis (selectively).

9.2.1 Mental Health Units

Mental patients are prone to cholera because of their poor hygienic conditions resulting from mental health. Patients should be well screened during admission to prevent introduction of infection into the wards.

Investigation of diarrhea cases and isolation of suspected cholera patients should be prompt and reported immediately to in charges or high level.

9.2.2 Internally Displaced Persons and Refugees Camps

The factors responsible for quick spread are the same as for categories above. The differences are mainly in composition of the communities (heterogeneous or mixed background - children, adults, language variation, behavior or culture difference etc.) and organization setting.

The risks of infection spread can be minimized during the camp construction following minimal requirement as per Sphere standards- Sufficient quantity of safe water - 15 to 20 litres of water per person per day. This amount includes drinking, food preparation, personal hygiene and dish/clothes washing.

a) Sanitation

Disposal of human excreta should be 1 latrine stance for every 20 persons. Latrine digging tools should be provided to Internally Displaced Persons (IDPs) and refugees to enable them dig their own latrine facilities.

b) General hygiene of the camp

The camp leaders should be fully involved in all stages of preparedness and response- surveillance and reporting of cases, mobilizing communities, monitoring of interventions.

Note: Hand washing facilities and soap: should be provided in adequate numbers to camps. The community should access these supplies at any time of the day or night

c) Detection and treatment of patients

In case a member in the camp develops cholera, the camp must be able to provide ORS or other home available fluids to prevent dehydration.

Reporting of any case with diarrhoea should be done immediately to the health authorities with in the camp

9.2.3 Slum areas

These are areas where cholera control has been very difficult to control. The communities are crowded, with inadequate facilities or facilities are locked during particular time like at night

In most of these slums there may be no place to put up sanitation facilities which are important in prevention and control efforts. Most of these facilities are communally owned.

There should be enforcement of the Public Health Act and enacting and enforcement of bye-laws on sanitation and hygiene

9.2.4 Landing sites

The terrain may not be unfriendly. Very often there is use of community latrine with open defecation as a practice.

There is a need to closely work with the urban authority for slums and Beach Management Units (BMU) for the landing sites to ensure appropriate intervention.

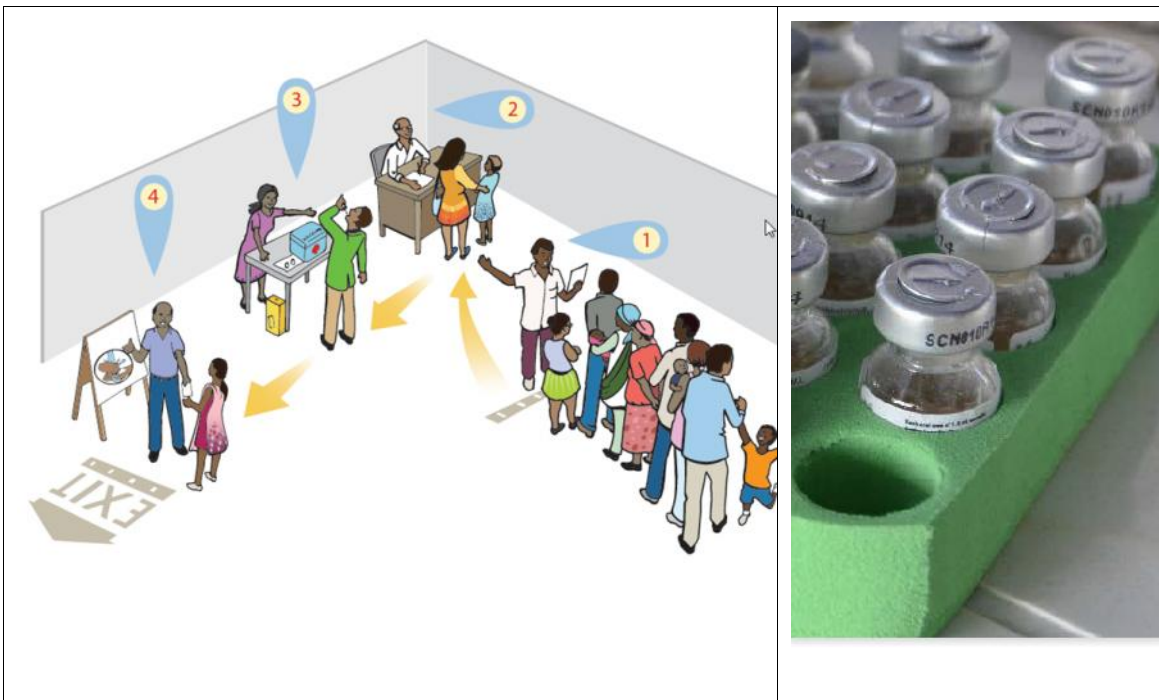
9.3 In case of an outbreak, appropriate Response

The heads of these institutions should be included on the Cholera Task Force where they should give daily update on cholera situation in their territory.

The heads should obtain the necessary information through daily parades, community reporting and active search of cases. CTU should be set up in affected community to increase access and ensure early treatment. Other measures as for cholera in other setting should also apply.

CHAPTER 10

Role of Oral Cholera Vaccines (OCV)



Supplementary use of OCV for Cholera Prevention

KEY WORDS

Oral Cholera Vaccines (OCV), Hotspots, WASH Promotion Integrated Approach. OCV Campaign

USEFUL INFORMATION FOR CHOLERA PREVENTION, PREPAREDNESS AND CONTROL

Oral Cholera Vaccine (OCV) is an additional tool for cholera control to supplement, **not to replace**, existing priority cholera control measures. The addition of OCV in cholera response will be assessed and recommended by the National Cholera Taskforce to achieve the maximum impact.

Vaccination is important supplementary intervention for cholera prevention and control in endemic setting with well defined cholera hotspots. The major hindrance for vaccination is high cost however in recently new, improved, less expensive and prequalified vaccines have become more affordable.

While OCV can be useful before or during cholera outbreak, it is preferable that risk assessments and the corresponding vaccination campaigns be carried before the outbreak has occurred for good effect.

PRIORITIES DURING INTERVENTIONS

10.0 Currently Available OCV

Three OCVs prequalified by WHO are currently available. All three consist of inactivated (killed) whole cells of *V. cholerae*

- Shanchol (Shantha Biotechnics, India) contains killed whole cells of *V. cholerae* serogroups O1 and O139 and is currently provided in single-dose vials.
- Dukoral (*Crucell Sweden AB*) consists of killed whole cells of *V. cholerae* serogroup O1 and a recombinant B subunit of the cholera toxin. The cholera toxin component also helps the vaccine provide short-term protection against enterotoxigenic *Escherichia coli* (for around 3 months).
- Euvichol (*Eubiologics, Republic of Korea*) is identical to Shanchol

Two weeks are needed between the last day of the 1st round and the 1st day of the 2nd round and was prequalified by WHO in late 2015.

Conducting OCV campaign is an **expensive approach** to cholera prevention and control. The minimum cost per fully immunized individual is US Dollars 5.0

10.1 Target population for vaccination

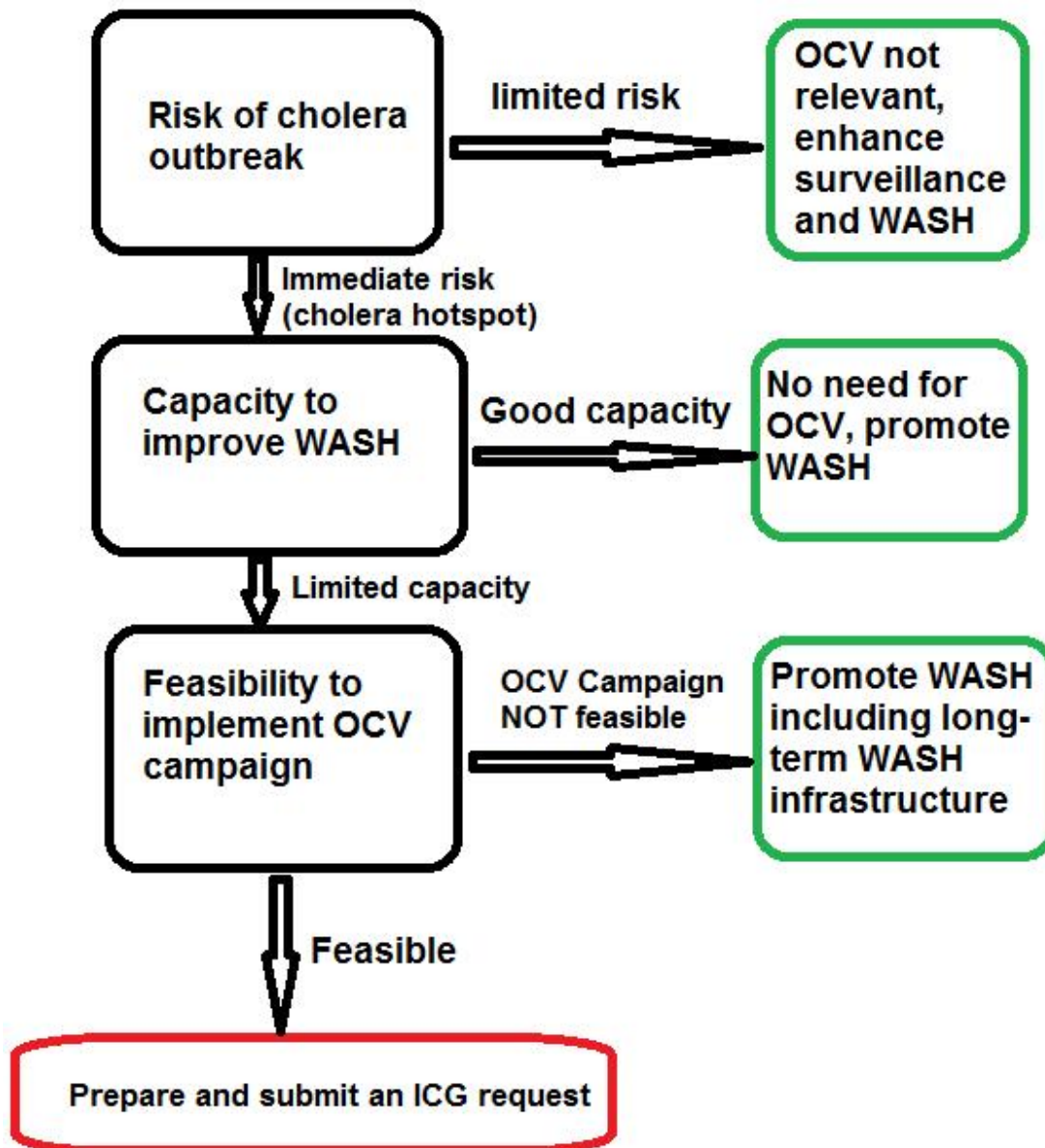
Generally, anyone 1 year and older is eligible to receive OCV.

10.2 Decision to use OCV

The decision to use OCV in cholera control will involve the National Task Force for Cholera. The decision will be based on:

- The relevance of OCV examined in the light of other public health priorities.
- The findings of a detailed risk assessment to identify circumstances in which the timely use of OCV will yield the maximum impact:
 - High risk areas (hotspots)
 - High risk populations or high risk groups - currently the national data show that the fishing villages and border communities are high risk groups
- The use of OCV will not be at the expense of other priority health interventions (WASH, Case management, surveillance, social mobilization, etc.)
- The feasibility of a quality immunization campaign in the targeted area (cold chain capacity, human resources, two-dose schedule, etc.)

Figure 11: Decision making tree for OCV use



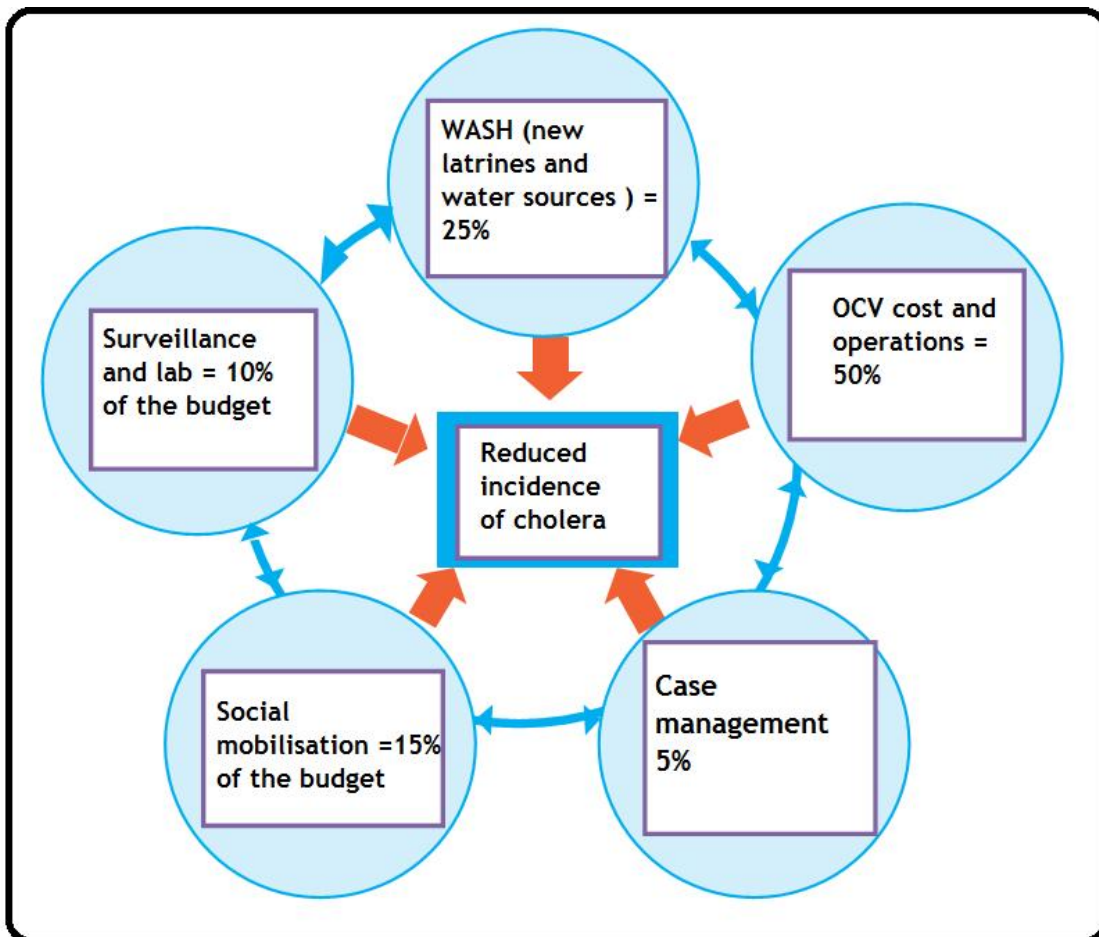
If a cholera vaccination campaign is deemed necessary after assessment of epidemic risk and public health priorities, water and sanitation programmes should be implemented alongside the vaccination campaign.

The existing surveillance system should be maintained and reinforced.

10.3 Resource mobilization and allocation during planning of OCV Campaign

During planning process and resource allocation emphasis should be put on integrated approach to cholera prevention as illustrated in the figure below:

Figure 12: An integrated approach leads to synergistic cholera prevention and control



A comprehensive work plan and budget should be developed and interventions apportioned funds as above. A campaign which does not cater for all other interventions should not be implemented since OCV is supplementing the others.

10.4 Importance of integrated approach for cholera control using OCV

- There are two main reasons why this is important. First, vaccination alone does not provide a community with complete protection from cholera. This is because the current vaccines are not 100% effective and protection is not life-long.
- In addition, not everyone in the community will be vaccinated; past OCV campaigns have not been able to achieve coverage rates greater than 70-80%. **Infants younger than 1 year of age and sometimes pregnant women will not receive the vaccine.**
- Second, other control measures such as water and sanitation improvements are the pillars of cholera prevention and increase the effectiveness of cholera vaccination and vice versa.
- Once the decision to use OCV is reached, the National Task Force for Cholera will liaise with the Global Task Force or the ICG to request for OCV and provide guidance on the planning and implementation of the campaign.

10.5 Campaign timing and scheduling

- Ideally, preventive vaccination campaigns in endemic areas should take place before the cholera season.
- Vaccinated persons should receive a card for easy identification and follow up ([Annex 13:](#)). The coverage for a given vaccination point should be computed from a tally sheet using the population of the vaccinated divided by eligible persons for vaccination times 100%. The sample tally sheet for OCV is attached, [Annex 14](#).

10.6 OCV delivery strategies and sites

There are three strategies that can be used namely:

- **Use of permanent facilities.** Fixed-site facilities such as health centers.
- **Outreach.** Mobile teams set up temporary vaccination sites in schools, churches, camps, markets, etc.
- **Door-to-door delivery.** This strategy gives high vaccination coverage but is time-consuming and costly.

10.7 Organizing OCV vaccination site

The sites should be organized to avoid excess crowding and long queues, and to ensure an efficient flow of people.

Required Furniture

- Two (2) tables (one for the registrar and one for the vaccinator) and three (3) chairs
- Additional seating (e.g., benches, mats to be used by caretakers/children, pregnant women and elderly people)

Required Supplies:

1. Banner/posters to identify the site on the outside
2. Vaccine carriers.
3. Forceps or pliers to open the vials.
4. Safety boxes , trash bags , bins for other waste.
5. Vaccination cards, tally sheets and pens/pencils.
6. Health education materials such as wall posters and leaflets on cholera prevention.

7. Any incentives or commodities such as soap or chlorine tablets, as available, to give to vaccine recipients.

Typical Layout of the vaccination site



Picture 16: organization of the the OCV vaccination site

1) Crowd controller, 2) registrar, 3) vaccinator, 4) an additional person to provide health education messages and materials, as available, and to be alert to anyone experiencing an adverse event.

At least three people are needed at each site: a crowd controller, a registrar and a vaccinator. The roles of each is in [Annex 15](#). A suggested composition of the team is as follows:

10.8 Storing and transporting the vaccines

- According to the package inserts, OCVs, should be kept at 2-8°C at all times, including when in transport, storage, and when used at a vaccination session.
- OCV should never be frozen. Any frozen OCV vials must be discarded. The vaccinator should check the vaccine vial monitor (VVM) for vaccines that have been exposed too much heat (stage 3 and above) and have them discarded.

Note that the “shake test” used for some vaccines, such as pneumococcal conjugate vaccine, does not work for OCV.

10.9 Recording and completing the tally sheets

At the end of each vaccination session, the registrar should complete the Tally Sheet with information about the number of doses received, the number used, the number remaining, and information about any vials with VVMs that have changed color.

10.10 Monitoring and reporting of adverse events

Like for any other vaccine adverse event with OCV is possible. Adverse event surveillance normally starts when the first vaccinations are given and lasts for several days (e.g., 14 days) following the campaign.

The vaccinator or health educator should tell everyone receiving the vaccination:

- That an adverse event is possible and common ones may include stomach upset, diarrhea, nausea and vomiting but that these are almost always mild and do not last very long.
- Where to seek care in case they experience an adverse event that is severe or persistent.

ASSESSMENT OF THE OUTBREAK RESPONSE

1. Was the mapping of the cholera hotpots done?
2. Was implementation of WASH promoted before considering the use of OCV?
3. Was the decision tree followed in deciding to implement OCV campaign?
4. Did the team consider the cost of OCV vs the promotion of WASH?
5. Was an integrated plan for the campaign developed and resource apportioned as recommended in chapter 10?
6. Was monitoring and reporting of adverse events following vaccination done?
7. Were vaccines and waste material handled as recommended in chapter?

ANNEXES: TOOLS AND TEMPLATES

Annex 1: Cholera Case Investigation Form

District: _____	Date of Case Report: ____/____/____ (DD,MM,YY)																
Case Report Completed by:																	
Surname: _____ Other Name: _____ Title: _____																	
District: _____ Sub-County: _____ Place of Work: _____																	
Phone: (____) _____ E-mail: _____																	
Section 1. Patient Information	Health Facility Name: _____																
Health facility department where patient seen:																	
<input type="checkbox"/> Outpatient department (OPD) <input type="checkbox"/> Inpatient department <input type="checkbox"/> Cholera Treatment Center <input type="checkbox"/> Pediatric Clinic <input type="checkbox"/> Emergency Room <input type="checkbox"/> On-call/After hours <input type="checkbox"/> Other: _____																	
Patient Surname: _____ Other Name: _____																	
Father's/Family Name: _____																	
Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female Age: _____ <input type="checkbox"/> Years <input type="checkbox"/> Months Date of Birth: ____/____/____ (DD,MM,YY)																	
If child less than age 18 years, name of responsible adult (Surname, Other Name): _____																	
Permanent Residence:																	
Head of Household: _____ Village/Town/ LC1: _____																	
Parish: _____ Sub-County: _____																	
District: _____ Nationality: _____																	
Occupation: _____																	
Section 2. Clinical Signs and Symptoms																	
Date of initial symptom onset: ____/____/____ (DD,MM,YY) Pulse: ____/min Blood Pressure ____/____ mmHg Weight: ____kg Height: ____cm Body temperature: ____ °C <input type="checkbox"/> Axillary <input type="checkbox"/> Oral <input type="checkbox"/> Rectal	Current Illness: Does the patient currently have any of the following? Malaria: <input type="checkbox"/> Yes <input type="checkbox"/> No																
Diarrheal signs and symptoms: Diarrhea <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk Number of stools in last 24 hours: _____	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Watery stools</td> <td style="padding: 5px;"><input type="checkbox"/> Yes</td> <td style="padding: 5px;"><input type="checkbox"/> No</td> <td style="padding: 5px;"><input type="checkbox"/> Unk</td> </tr> <tr> <td style="padding: 5px;">Rice water stools</td> <td style="padding: 5px;"><input type="checkbox"/> Yes</td> <td style="padding: 5px;"><input type="checkbox"/> No</td> <td style="padding: 5px;"><input type="checkbox"/> Unk</td> </tr> <tr> <td style="padding: 5px;">Mucous stools</td> <td style="padding: 5px;"><input type="checkbox"/> Yes</td> <td style="padding: 5px;"><input type="checkbox"/> No</td> <td style="padding: 5px;"><input type="checkbox"/> Unk</td> </tr> <tr> <td style="padding: 5px;">Bloody stools</td> <td style="padding: 5px;"><input type="checkbox"/> Yes</td> <td style="padding: 5px;"><input type="checkbox"/> No</td> <td style="padding: 5px;"><input type="checkbox"/> Unk</td> </tr> </table>	Watery stools	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unk	Rice water stools	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unk	Mucous stools	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unk	Bloody stools	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unk
Watery stools	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unk														
Rice water stools	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unk														
Mucous stools	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unk														
Bloody stools	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unk														

Other signs and symptoms:	
Nausea <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk Vomiting <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk If yes, number of episodes in last 24 hours: _____ Dry mucous membranes <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk Capillary refill > 3 seconds <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk	<input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No Dehydration <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk Abdominal pain <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk Leg cramps <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk Difficulty breathing <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk Altered consciousness <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk Coma <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unk
Please list any other relevant clinical findings: _____ _____ _____	
Stool Sample	Name of Person collecting sample: _____ Phone: _____
Type of sample	Date of sample
Whole stool: No <input type="checkbox"/> Yes <input type="checkbox"/> _____/_____/____ (DD, MM, YY)	Sent to laboratory: <input type="checkbox"/> Yes <input type="checkbox"/> No _____/_____/____ (DD,MM,YY)
Rectal swab: No <input type="checkbox"/> Yes <input type="checkbox"/> _____/_____/____ (DD, MM, YY)	Transported in Cary Blair medium? <input type="checkbox"/> Yes <input type="checkbox"/> No
Section 3. Treatment	
Treatment BEFORE arriving at health facility: <input type="checkbox"/> Commercial ORS <input type="checkbox"/> Antibiotics <input type="checkbox"/> IV Fluids/ Ringer's Lactate <input type="checkbox"/> Traditional Medicine <input type="checkbox"/> Homemade salt/ sugar solution Name of all medicines given: _____ _____ Date of last treatment _____/_____/____ (DD,MM,YY)	Treatment give AFTER arriving at health facility: <input type="checkbox"/> Commercial ORS <input type="checkbox"/> Antibiotics <input type="checkbox"/> IV Fluids/ Ringer's Lactate <input type="checkbox"/> Traditional Medicine <input type="checkbox"/> Homemade salt/ sugar solution Name of all medicines given: _____ _____ Date of last treatment _____/_____/____ (DD,MM,YY)
Section 4. Epidemiological Risk Factors and Exposures	

1. Did the patient have contact with another known or reported suspect cholera case? Yes No Unk
 If yes, specify location: _____ Date(s) of exposure: ___/___/___ - ___/___/___ (DD,MM,YY)
 Name of suspect case, Surname _____ Other name: _____
 District Case ID (if known): _____ During contact, was suspect case: Alive Dead Unk

2. Did the patient attend or participate in a funeral in the 7 days before becoming ill? Yes No Unk
 If yes, name of deceased: _____ Date(s) of attendance: ___/___/___ - ___/___/___ (DD,MM,YY)
 If yes, specify location: _____

3. Did the patient attend another social gathering or event in the 7 days before becoming ill? Yes No Unk
 If yes, specify location: _____ Date(s) of attendance: ___/___/___ - ___/___/___ (DD,MM,YY)

4. Did the patient attend a market or trading center in the 7 days before becoming ill? Yes No Unk
 Location: _____ Dates of travel: ___/___/___ (DD,MM,YY)

5. Did the patient travel outside the home village/town in the last 7 days before becoming ill? Yes No Unk
 Location: _____ Dates of travel: ___/___/___ (DD,MM,YY) to ___/___/___ (DD,MM,YY)
 Location: _____ Dates of travel: ___/___/___ (DD,MM,YY) to ___/___/___ (DD,MM,YY)

6. What is the patient's primary source of drinking water at the home?
 Public Tap Piped water in home/yard Shallow well River/Stream/Lake/Pond Spring Bottled water
 Other, please specify: _____

7. Is the drinking water treated? Yes No Unk If yes, by which method(s)? Boil Bleach/Chlorine Filter
 Other, please specify: _____

Section 5. Patient/Clinical Status

<p>Outcome: Not hospitalized (sent home with treatment) <input type="checkbox"/></p> <p>Hospitalized <input type="checkbox"/> If hospitalized, please complete the following: Date of hospitalization: ___/___/___ (DD,MM,YY) Date of discharge from hospital: ___/___/___ (DD,MM,YY) Name of Hospital: _____ District: _____</p>	<p>Current Status of Patient: <input type="checkbox"/> Alive <input type="checkbox"/> Deceased <input type="checkbox"/> Unk Date of death: ___/___/___ (DD,MM,YY)</p> <p>If deceased, what was the place of death? <input type="checkbox"/> Community; Village: _____ District: _____ <input type="checkbox"/> Hospital; Name: _____ District: _____</p> <p>Place of Funeral: <input type="checkbox"/> Community; Village: _____ District: _____</p>
--	--

Section 6. Additional Comments

Comments/Notes: _____

Annex 2: Cholera Case Surveillance Form (Line List)

Date of report.....Report number this year:.....

Health Unit:.....LC1 Sub-county.....District.....

Name	Sex	Age	Village	subcounty	Date of onset	Date admission	Signs and symptoms	Lab results (RDT and Culture)	Type of treatment	Outcome- discharged, died, referred	Date of discharge

Actions taken by the Health Unit:

.....

Remarks:.....

Annex 3: Cholera Contact Tracing Form

Date of follow up.....Name of the Health worker (s):.....

Health Unit District.....Subcounty.....

Name	Sex	Age	Name of household head	Number of cholera patients in the household	Village	Parish	Date of exposure	Date of visit by HW	Signs and symptoms	Chemoprophylaxis given	WASH intervention given	Phone numbers	Remarks

Actions taken by the Health team:

.....

Remarks:.....

.....

Annex 4: A Filled Situational Report Template.

Situation Report

Mbale District Cholera outbreak

Date: 20th February 2016

No	Summary of cases	Total Number
	New Cases	1
1	New case(s) suspected	1
2	New cases(s) confirmed	0
	New Deaths	0
3	New deaths in Suspected	0
4	New deaths in Confirmed	0
5	Cumulative cases (Suspected & confirmed cases)	155
6	Cumulative deaths (Suspected & confirmed cases) in Health Facilities Community	(2 deaths from CTC, 4 deaths in community)
7	Total number of cases on admission	2
8	Cumulative cases discharged	141
9	Runaways from isolation (CTC)	5
10	Number of contacts listed in the last 24 hours (new)	15
11	Total number contacts listed currently in the districts	671
12	Number of contacts followed up in the last 24hrs	15
13	Total contacts that completed 7 day follow-up	193
14	Contacts lost to follow up	0
15	Number of HHs visited in the last 24 hrs	0
16	Total number of HHs visited	118
17	Total number of contacts followed up today	171
18	Current admissions of Health Care Workers	0
19	Cumulative cases of Health Care Workers	0
20	Cumulative deaths of Health Care Workers	0
21	Specimens collected and sent to Lab today	0
22	Cumulative specimens collected	98
23	Cumulative cases with lab. confirmation	39
24	Date of discharge of last confirmed case	16th JAN, 2016
25	Confirmed cases that have died	

Rumour and other unverified information

Place (District / Community)	Description	Follow-up Actions on rumours
None		

interventions	Progress on implementation of	Follow-up Actions on rumours
WASH	30 new latrines constructed in Namatala	No inadequate hand washing facilities.
Case management etc	CTU established at Namatala	Request for additional beds

Partners present

MOH, URC, UNICEF, etc.

Annex 5: Cholera Standard Laboratory Investigation Form

Laboratory Form for Suspect Cholera

Clinical Specimens	Date Form Filled: ___/___/___ (DD, MM, YY)		
<ul style="list-style-type: none"> Each specimen should be labeled with Case/specimen ID #, date of collection, and patient name. Specimens should preferably be collected in Cary Blair medium and kept at 4°C until time of processing. Specimens should be packaged appropriately and sent in a coolbox with ice pack. Please refer to the SOPs for specimen handling, packaging and transport. The following types of stool samples may be submitted: <ol style="list-style-type: none"> 1. Drawn upon admission from a sterile wide mouth stool container 2. Rectal swab containing stool placed in Cary Blair transport media 			
District: _____ Health Care Facility: _____			
Patient Information			
Patient Surname: _____ Other Name: _____			
Father's/Family Name: _____			
Age: _____ <input type="checkbox"/> Years <input type="checkbox"/> Months Date of Birth: ___/___/___ (DD/MM/YY) Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female			
If child less than age 18 years, name of responsible adult (Surname, Other Name): _____			
Type of sample Date of sample collection			
Whole stool: Yes <input type="checkbox"/> No <input type="checkbox"/> ___/___/___ (DD/MM/YY)	Sent to laboratory: Yes <input type="checkbox"/> No <input type="checkbox"/>		
Rectal swab: Yes <input type="checkbox"/> No <input type="checkbox"/> ___/___/___ (DD/MM/YY)	Date ___/___/___ (DD/MM/YY)		
Specimen Collecting Staff Member			
Surname: _____ Other Name: _____ Title: _____			
Place of Work: _____ Phone: (____) _____ E-mail: _____			
Reception of Specimen at Laboratory	Local Lab ID#:		
Name of laboratory : _____			
Name of technician performing test: _____			
Check which of the following tests were performed in the laboratory and record the results for each test.			
YES	NO	NAME OF TEST	RESULTS
		RDT test (after 6 hr enrichment in 1%APW)	<input type="checkbox"/> Positive O1 <input type="checkbox"/> Positive O139 <input type="checkbox"/> Negative <input type="checkbox"/> Invalid
		Culture	<input type="checkbox"/> Positive <input type="checkbox"/> Negative
		Oxidase test	<input type="checkbox"/> Positive <input type="checkbox"/> Negative
		Indole test (SIM)	<input type="checkbox"/> Positive <input type="checkbox"/> Negative
Pathogen suspected:			
Isolates sent to reference lab? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, Date : ___/___/___ (DD, MM, YY)			
Reference Laboratory:		Date : ___/___/___ (DD, MM, YY)	
Name of Technician: _____ Phone: _____ E-mail: _____			

Pathogen identified:			<input type="checkbox"/> None confirmed
	Serogroup	<input type="checkbox"/> 01 <input type="checkbox"/> 0139 <input type="checkbox"/> Not done	
	Serotype	<input type="checkbox"/> Inaba <input type="checkbox"/> Ogawa <input type="checkbox"/> Not done	
	Biotype	<input type="checkbox"/> El Tor <input type="checkbox"/> Classical <input type="checkbox"/> Not done	
	Antibiotic sensitivity	<p align="center"><u>Please indicate for each antibiotic tested: (sensitive=S, intermediate=I, resistant=R)</u></p> Tetracycline: _____ Ampicillin: _____ Ciprofloxacin: _____ Cotrimoxazole: _____ Chloramphenicol: _____ Nalidixic Acid: _____ Azithromycin: _____ Other: _____	
Isolates stored in reference lab?		ID#: _____ Position: _____	
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Date : ___/___/___ (DD, MM, YY)	

Annex: 6: A Checklist Of The Required Actions For Cholera Prevention And Control

- 1. Planning, coordination, supervision and monitoring of interventions**
 - ▣ Comprehensive cholera prevention, preparedness and control plan that is implemented
 - ▣ Formation or reactivation of a Cholera Task Force, meeting regularly and timely
 - ▣ Multisectoral response beyond health sector alone
 - ▣ Ensure clear roles and responsibilities of each members
 - ▣ Supervision and monitoring of interventions
- 2. Surveillance and reporting of cases and deaths**
 - ▣ Provision of standard case definitions guidelines
 - ▣ Reporting of all suspected cases and deaths
 - ▣ Investigation of all outbreaks including rumors
 - ▣ Contact tracing and follow up of cases and suspects
- 3. Good clinical management of cases**
 - ▣ Ensure rapid and effective detection
 - ▣ Proper treatment of clinical cases
 - ▣ Enforce hygienic practices and disinfection in health facilities
 - ▣ Supervise and monitor activities
- 4. Use safe water, construction and protection of water sources**
 - ▣ Provide adequate quantities of water
 - ▣ Promote use of safe drinking water - chlorination, boiling
 - ▣ Promote safe water storage: use of narrow-necked vessels - jerrycans
- 5. Good sanitation and hygiene practices**
 - ▣ Safe disposal of excreta and garbage; Promotion of hand-washing after use of latrines; before eating and handling food Immediate burial of the cholera dead
 - ▣ Promotion hygiene practices in homes and institutions
- 6. Food handling, preparation and eating**

- Promote safe food handling/preparation
- Encourage adequate re-heating of leftover food
- Promote breastfeeding
- Restrict / ban the selling of cold food and locally made risky drinks
- Inspection of eating places and institutions

7. Social mobilization

- Provide information to the public on: prevention of infection, care of the sick and handling of the dead
- Ensure community participation and full involvement of community leaders

8. Integrated use of Oral Cholera Vaccine (OCV)

- Promote WASH (New latrine construction and use, hand washing, chlorination of water, protection of water sources)
- Strengthen cholera surveillance, Prepare to treat cholera cases
- Provide OCV to communities in cholera hotspots

Annex 7: District Cholera Preparedness Plan Template

	Item	No/Qty/Pple/mtrs	Days	Freq	Amount	Totals	Comment
1	Support establishment and regular meetings of the District Cholera taskforce						
	SDA						
	Air Time						
	Stationary						
	Total						
2	Orientation/Training of the Rapid Response team on cholera Response by Central team						
	Per diem for RRT						
	SDA						
	Transport refund						
	Per diem for facilitator (Surveillance, Health educator, Case management, Laboratory, Environmental health)						
	Honorarium						
	Drivers -facilitators						
	Fuel- assume Kla						
	Local running						
	Stationary/communication						
	Sub total						
3	Deploy skilled health workers to take charge and manage the CTC						
	Pay risk allowance to health workers						
	Air Time - load 2 networks						
	Stationary						
	Subtotal						

	Item	No/Qty/Pple/mt rs	Days	Freq	Amount	Totals	Comment
4	Provide clean water on a daily basis for use at the CTC						
	Daily collection of at least 20 jerrycans per day						
	Subtotal						
	Social Mobilization						
5	Radio talk shows: on cholera						
	Radio airtime						
	DSA for soc comm membersTalk show hosts						
	Sub total						
Public awareness through interpersonal communication							
6	Train of CHEWS or VHTs in cholera response and management at community level						
	Lunch allowance -targeting at risk parishes & villages						
	Transport refund						
	SDA for trainers						
	SDA Driver						
	Fuel						
	Stationary/communication						
	Sub total						
7	Deploy health assistants, health educators and inspectors (field staff) to take charge of the intense 10 day hygiene and sanitation improvement exercise						
	Per diem for 4 H/inspectorate staff camped in affected parishes						
	Air Time - load aitime monthly						

	Item	No/Qty/Pple/mtrs	Days	Freq	Amount	Totals	Comment
	Weekly support to VHTs for hygiene & sanitation campaign						
	Sub total						-
8	Active search for cholera cases and sample shipment						
	Per diem for 4 H officer						
	Transportation of samples						
	Sub total						
9	Support supervision and follow up by district & HSD teams to affected communities						
	SDA for task force members						
	Driver DSA						
10	Fuels, oils and lubricants						
10	Fuel for contact tracing, support supervision, Monitoring, Ambulance vehicle referrals					-	
	Sub total					-	
11	Follow up by the central team to monitor implementation after two weeks - one month						
	Per diem for facilitator (Surveillance, Health educator, Case management, Laboratory, Environmental health)						
	Driver -facilitator						
	Fuel- assume Kla						
	Local running						
	Sub total						
	Grand Total						

Annex 8: National Cholera Kit for 100 patients and contacts

Item	Unit	Quantity
Ringers Lactate	Litre	480
Cannules size 18	Pieces	200
Cannules size 22	Pieces	200
Cannules size 24	Pieces	200
Disposable Gloves	Pairs	2,500
Doxycycline capsules	100 pack	1,000 tablets/capsules
Tetracycline capsules	3 tins	3,000 capsules
Ciprofloxacin tablets	500 mg Tablets	1,000
Erythromycin tablets	250mg Tablets	2,000
Gauze	500g rolls	10
Cotton	500g rolls	10
Zinc Oxide	(7.5cmx5m) pieces	6
Syringes & Needles	5mls pieces	300
Plastic Aprons	Pieces	10
Gumboots	Pieces	10
Giving Sets	Pieces	200
Manual Labour Gloves	pairs	10
JIK	12 litre boxes	20
Giving Sets	Pieces	10
<i>HTH Chlorine</i>	<i>45kg drums</i>	1
Liquid Soap	20 litre jerrycan	4
Aquatab	Tablets	2,000
Oral Rehydration Salt with Zinc	Sachets	200

Item	Unit	Quantity
tablets		
Oral Rehydration Salt	Sachets	1,800
Dextrose 50%	100ml bottles	10
Lab. stool collection containers		100 pcs

Annex 9: End of Cholera Outbreak Report Format

1. INTRODUCTION

The introduction contains a brief presentation of:

- The situation in which the outbreak occurred;
- The rationale for the assessment of the outbreak response and the objectives of the evaluation;
- The composition of the team in charge of assessment; the methodology of the assessment (personal interviews, focus group, observation of practices or meetings, case control study, etc.).

2. DESCRIPTION OF THE CHOLERA OUTBREAK

The epidemiological description should include:

- cholera trends over time and the population groups regularly affected by the disease if the country or district has had previous cholera outbreaks;
- the nature of the recent outbreak in terms of time, places and people - when it started, where, who was affected, what were the decisions taken to control the outbreak).
- Attack rate and CFR by place, age, and sex); a list of the risk factors overcrowding, poor sanitation, lack of safe water, contaminated food, underlying factors such as malnutrition.

3. ASSESSMENT OF THE OUTBREAK RESPONSE

The assessment of the response should address the following issues, stressing strengths and weaknesses:

- ▣ organization of the response
- ▣ case management
- ▣ surveillance and laboratory confirmation
- ▣ implementation of WASH, control of the environment
- ▣ Social mobilization- control of the spread in the community
- ▣ For cholera hotspots implementation of WASH activities supplemented by OCV

4. CONCLUSION AND RECOMMENDATIONS

Short term, medium term, and long term.

Annex 10: Cholera Patient Monitoring (Observation) Form

Date:..... Time:..... Name of CTU/ Health Facility:.....
 Name:..... Age:..... Sex:..... Next of kin ;.....
 Address(LC1):..... Name of LC1 chairman:.....

ASSESSMENT

Diarrhoea present: <input type="checkbox"/>	Vomiting <input type="checkbox"/>	General condition
Date of onset:..... Time:..... No of motions.....	Date of onset No of vomiting.....	Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/>
Type of diarrhea:	Type of vomitus	Degree of dehydration
Watery <input type="checkbox"/> Mucoid <input type="checkbox"/> blood <input type="checkbox"/>	Watery <input type="checkbox"/> food material <input type="checkbox"/> blood <input type="checkbox"/>	No dehydration <input type="checkbox"/> Some <input type="checkbox"/> Severe <input type="checkbox"/>
Treatment plan: Plan A <input type="checkbox"/> Plan B <input type="checkbox"/> Plan C <input type="checkbox"/>		

OBSERVATIONS

BP																								
Temperature																								
Pulse																								
Vomitus																								
Diarrhea																								
Urine (mls)																								
ORS(mls)																								
IV fluids (mls)																								
Drugs																								
Time	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00

Remarks / clinical notes:

Annex 11: Preparation and use of Chlorine Disinfectants

Chlorine comes in two storage types	
HTH chlorine (powder)	= 70% of active matter
JIK (Liquid)	= 5% of active matter

Solution	Preparation	Application
(1) 0.05% chlorine Solution	1 table spoon or 15gm of HTH Chlorine 15 table spoon full or 1/4 tumpeco mug = 125ml of JIK in 20 litres of water	Hand disinfection bathing and washing clothes - sock for 15 minutes. Also used in spray pumps for clothes
(2) 0.2% chlorine solution (use gloves when handling this Solution)	1 table spoonful or 15gm chlorine 1 tumpeco mug of JIK in 5 litres of water	beds, floor, utensils, latrines, walls, plastic buckets, etc
(3) 2% chlorine solution (use gloves when handling this Solution)	2 table spoonful of HTH chlorine 30gm in 1 litre of water or 2 tumpeco mugs of JIK in 1 litre of Water.	Faeces, stool, vomitus dead bodies- clean with this solution, fill up with cotton wool in nose, throat and anus
(4) 1% solution (stock solution)	15gms of HTH chlorine or 250ml of JIK in 1 litre of clean water	Treatment of drinking water

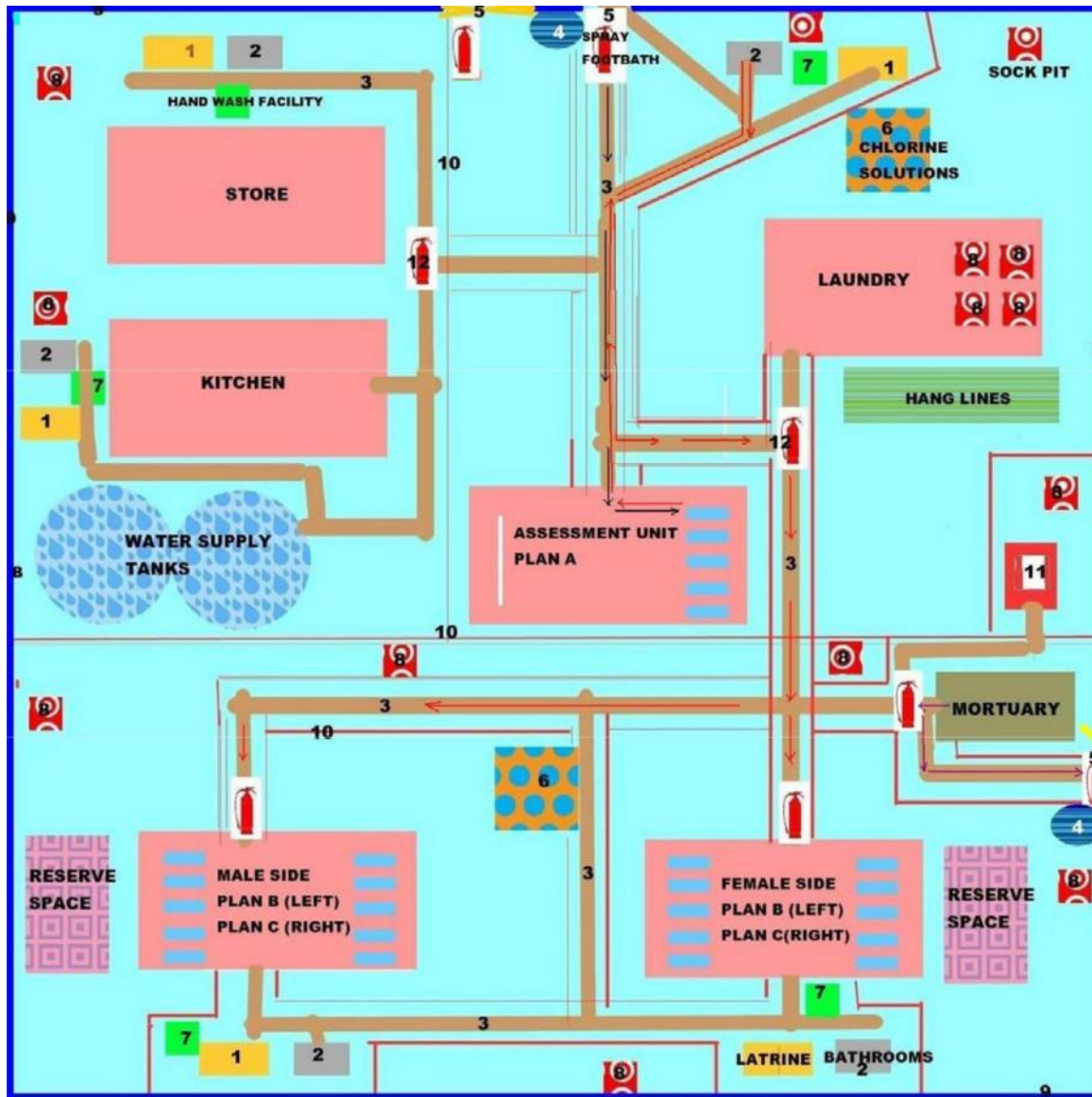
Note

You can also apply the following formula to any Jik solution to a specific concentration for example to get 0.05% from 5% Jik is shown below.

$$\frac{\% \text{ Chlorine solution (JIK)}}{\% \text{ Desired Chlorine solution}} = \frac{5\%}{0.05\%} = \frac{100}{1}$$

0.05% from Jik = 99 of water for 1part of 5% Jik solution

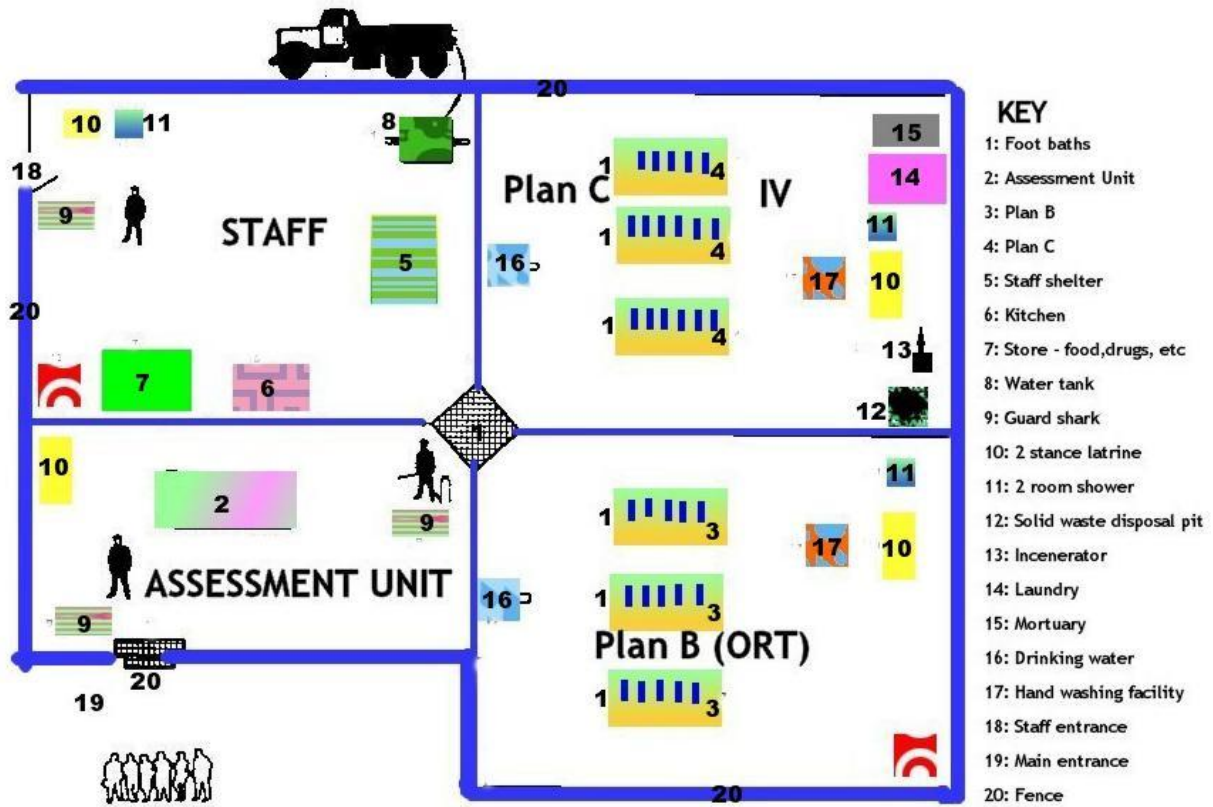
Annex 12: Cholera Treatment Unit (CTU)








Key

1= Two stance latrines	5 = Entrance / gate	9 = Main fence
2= Two room bath	6 = Chlorine solution	10 = Partitions / barrier
3 = Footpaths	7 = hand washing facility	11 = Incinerator/ waste pit
4 = Guard shelter	8 = sock pit	12 = Foot bath /spray

Cholera Treatment Unit (2)



Annex 13: Oral Cholera Vaccine Card Sample

Front of the card		Back side													
<p>Oral Cholera Vaccine -- Vaccination Card Ministry of Health</p> <p>OCV Vaccination Serial Number: _____</p> <p>Name: _____ Age (yr): _____</p> <p>District: _____ Village: _____</p> <p>Site Name: _____</p> <table border="1"> <thead> <tr> <th>Oral Cholera Vaccine Dose</th> <th>Lot no/Entry date</th> <th>Vaccination date</th> <th>Date of next vaccination</th> </tr> </thead> <tbody> <tr> <td>1st dose</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2nd dose</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Oral Cholera Vaccine Dose	Lot no/Entry date	Vaccination date	Date of next vaccination	1st dose				2nd dose				<p>Key messages for cholera prevention</p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%; text-align: center;">  <p>Drink and use safe water. Safe water is water that is bottled with an unbroken seal, has been boiled, or has been treated with a chlorine product.</p> </div> <div style="width: 33%; text-align: center;">  <p>Wash food with safe water and either peel food or cook it well, eat it hot, and keep it covered.</p> </div> <div style="width: 33%; text-align: center;">  <p>Wash hands often with soap and safe water (after using the toilet, before eating or cooking, after eating, after cleaning baby's faces); if no soap is available, brush hands often with ash or sand and rinse with safe water.</p> </div> <div style="width: 33%; text-align: center;">  <p>Use latrines or bury your feces. Do not defecate in any body of water.</p> </div> <div style="width: 33%; text-align: center;">  <p>Keep latrines clean.</p> </div> </div>	
Oral Cholera Vaccine Dose	Lot no/Entry date	Vaccination date	Date of next vaccination												
1st dose															
2nd dose															

Annex 14: Oral Cholera Vaccine tally sheet

Date:.....Name of HW (s).....

Name Health facility.....Subcounty.....

District.....

Coverage = vaccinate/ total persons eligible for vaccination X100%

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Annex 15: Roles and responsibility of members of the vaccination team

Role	Responsibility
Crowd controller	Welcomes people and ensures that the site is well organized.
Recorder or registrar	Screens people for eligibility and fills out the vaccination card and vaccine register.
Vaccinator	Double checks the eligibility of the individual, prepares and administer vaccines, ensures that the cold chain is maintained, and disposes empty vaccine vials into safety boxes.
Educator/Adverse Event Focal Point	Provides health education on cholera-prevention, gives out commodities (e.g., soap, chlorine tablets), reminds individuals about the need to obtain the second dose and explains where and when the second round will take place.
Supervisor	Monitors and advises staff, ensures that enough vaccine and supplies are in place and forms are completed, and troubleshoots any problems.

Annex 16: Sub-committees of the Task force and their team heads/chairpersons

Sub-committee	Responsibility	Chair
Surveillance and laboratory	Reporting of cholera cases and deaths, detection, confirmation and monitoring of outbreaks Listing of cases and contacts Compile situational reports.	District Surveillance Focal person (DSFP)
Case Management and Infection Control	Treatment of cases, enforce infection control, participate in selective chemoprophylaxis	Head of the district hospital (MS)
Coordination and resource mobilization	Invitation of stakeholder to the meetings, stakeholder mapping, mobilize resources for intervention	Chief Administrative Officer (CAO), DHO (Deputy chair)
Water Sanitation and Hygiene (WASH)	Promotion of WASH, Supervision of burial of cholera dead (burial team)	District Health Inspector (DHI), District Water Officer (Co-chair)
Social mobilization	Education of the communities on prevention of cholera and behavior change	Resident District Commissioner (RDC), District Health Educator (Deputy chair)
Oral Cholera Vaccine (OCV)	Quantification of vaccines, cold chain maintenance, determination of coverage, Ensuring WASH is part of the vaccination campaign	Assistant District Health Officer (Maternal and Child Health), ADHO-MCH
Public Relation Officer (PRO)	Press release on the status of cholera outbreak in the district	District Health Officer (DHO).

Annex 17: Speech by the Hon. Minister of Health for State - Primary Health Care during the launch of Cholera Prevention and Control Strategic Plan (NICCP17-22) and the revised guidelines, June 2017, Ridar Hotel, Mukono district

- Representatives from OPM, MWE, MOES
- The World Health Organization Representative
- Members of Top Management of Ministry of Health
- Secretaries for Social Services in the Local Governments
- Representative from Makerere University School of Public Health
- All our Development Partners present
- Members of the press
- Participants
- Ladies and gentlemen

Good afternoon.

It gives me great pleasure to be with you today to launch two important documents that is the National integrated Comprehensive Cholera Plan 2017/22 (NICCP17-22) and the new cholera prevention and control guidelines for Uganda.

As you are aware in few years from now Uganda will join middle income status which is incompatible with preventable diseases such as cholera. I note with satisfaction the timing of this launching which resonates very well with “Kisanja Hakuna Muchezo”.

The time to say goodbye to cholera outbreaks starts today! This is because we have the arsenal to fight it.

That is the National Integrated Comprehensive Cholera Plan in which multi-sectoral and collective efforts are embedded. This is because the risk factors for cholera prevention cut through a number of sectors. I am happy to see all key relevant sectors and actors represented in this meeting.

The task before us is surmountable and doable for example the last confirmed cholera case was in Buliisa district in November 2016. We know that the top 5 districts for cholera cases are Nebbi in Northern Uganda, Hoima, Buliisa, Kasese in Western Uganda, and Mbale, in Eastern Uganda which contribute 60% of all cholera cases in the country.

In addition, the research that the Ministry of Health conducted with Makerere University showed that 58% of all cholera cases were from the fishing villages who make up the less than 5% of the total Uganda population. In all the cholera

reporting districts the common risk factors include: inadequate access to safe water, poor sanitation and hygiene.

Since we know where the problem is and the risk factors, then most important aspect is good governance to ensure that our people can access safe water, good sanitation and promotion of environmental and individual hygiene.

The national and district stewardship need to work together to provide sustainable social services, mobilize and empower the high risk communities to kick cholera out of Uganda.

Cholera is severe watery diarrheal disease that kills within few hours. It can be imported or exported as it happened in Haiti and devastated this country. Cholera a preventable diseases has serious fatal and economical consequences for the households and the country. This was clearly demonstrated in 2008 when an outbreak hit one of the countries in Southern Africa and the economy was paralysed and 4300 deaths reported. The total cost of controlling this outbreak was USD 18 millions. We should not allow such situation to face us too.

As I talk now, cholera outbreak is in the Horn of Africa causing humanitarian crisis where 30,000 - 40,000 cases with 360- 780 deaths are reported in each of three countries of Yemen, Somalia and Ethiopia.

In order to register and consolidate progress, we must focus on the priority interventions namely: good stewardship at all levels, increased access to safe water, good sanitation and hygiene, community mobilization and empowerment and effective public health services.

We have provided hard and soft copies on the Ministry of Health Website of the Plan and Guidelines for the districts to access and use in prevention of cholera.

My appeal to you all is to focus on the key interventions mentioned above and others like bye-laws to prevent cholera in Uganda and reduce new cases by 50%.

Last but not least, I wish to convey the government of Uganda gratitude and appreciation for the unreserved support in the development of these documents which I am going to launch.

It is now my pleasure to launch “The National Integrated Comprehensive Cholera Plan Fiscal Years 2017/22” and Cholera Prevention and Control Guidelines.

THANK YOU FOR LISTENING TO ME!

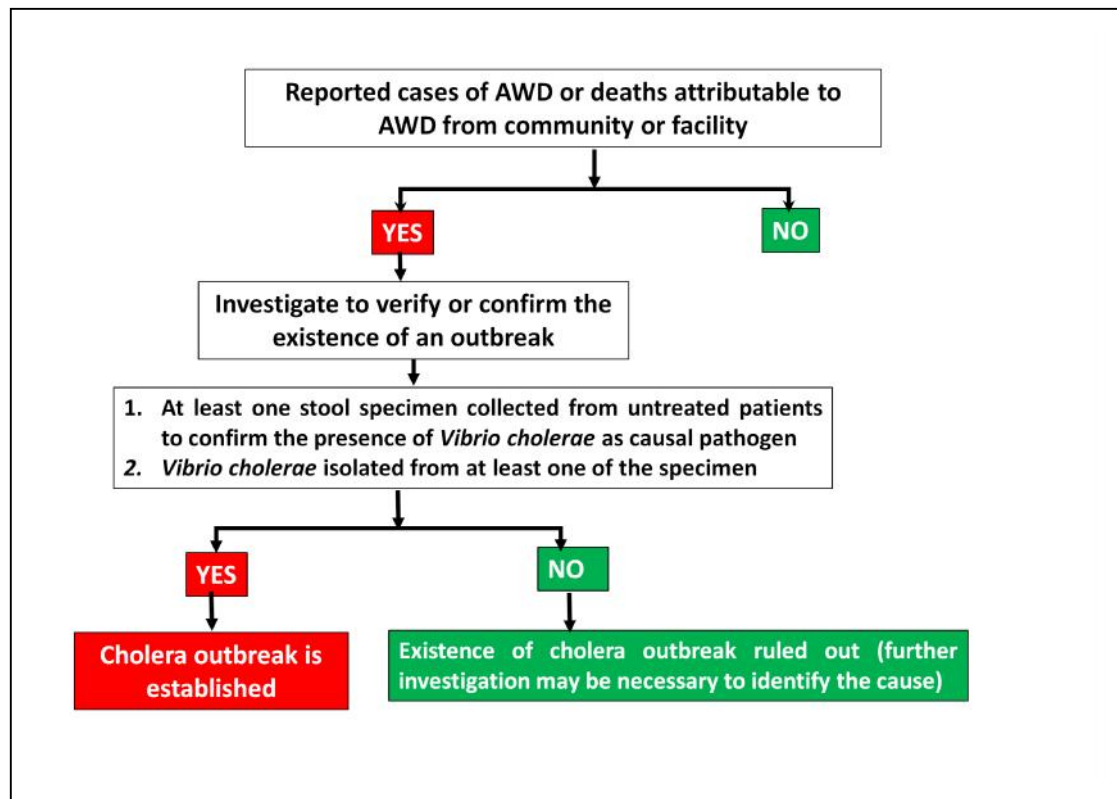
For God and My Country



Hon. Dr. Joyce Moriku Kaducu

Minister of State for Health - Primary Health Care

CHOLERA



Control of Diarrheal Diseases (CDD), Ministry of Health, P.O BOX 7272 Kampala
General telephone line: 256-414-340874/231563/9

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